

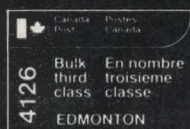
University of Alberta
Alumni Association
Autumn 1989

NEW TRAIL



75th Anniversary
FACULTY OF
PHARMACY AND
PHARMACEUTICAL
SCIENCES

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75 Years of
Pharmacy

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Edge

Preparing
Pharmacists
for Practice

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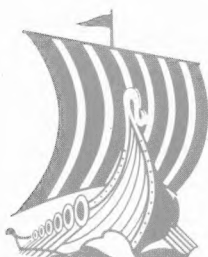
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NEW TRAIL

My first memory associated with the University of Alberta is of the 1948 *Evergreen and Gold* yearbook my mother had acquired along with her teaching certificate. Her picture was there—Hazel M. Berg, Mannville—but somehow I had a hard time connecting my mother with all of the goings-on the book revealed.

I remember being particularly impressed by the athletes taking part in contests that I, a youngster living on a ranch in southern Alberta, could only dimly comprehend.

My first exposure to the University itself came when my father's youngest sister, Rita Wolski (Pilger), '62 BSc(Pharm), completed high school in Camrose and came to Edmonton to study pharmacy—that would have been 1959. By that time my family had moved to the Colchester district south of Edmonton, and occasionally we would pick my aunt up to give her a ride home.

Almost from the beginning then, my understanding of the University of Alberta has been as a place where pharmacy (among other things) is taught. However it wasn't until I began working on this special issue of *New*

Trail that I gained any real appreciation of how much is involved in preparing pharmacists for their profession.

In this issue celebrating 75 years of pharmacy, we try to give some insight into a relatively small school with some big demands made upon it. We look at some of the exciting things happening in the Faculty as well as its nature and history.

The problem (not a new one) has been deciding what to leave out. We touch upon many of the interesting and important things happening in the Faculty, but certainly not all. Because much of the magazine was compiled over the course of the summer, not all faculty members were available to discuss their work—then, too, not all research lends itself equally well to our reporting.

To those who have helped with this issue, I extend my thanks. In particular I would like to thank the people of Synphar Laboratories and Biomira Inc.

Rick Pilger
Editor



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Two companies with University of Alberta roots are taking leading-edge research into the marketplace.

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The Faculty of Pharmacy and Pharmaceutical Sciences is looking to the future as it celebrates 75 years.

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We present a dozen brief reports giving a glimpse into the life of the Faculty.

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Cover
Pioneering work done in the University's Faculty of Pharmacy and Pharmaceutical Sciences is contributing to a promising new method for monitoring the effectiveness of cancer therapy. Here a radioimmunoimage shows the presence of cancerous cells in the lymph glands (bright yellow).

Image courtesy of Biomira Inc.



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Exemplary Service Recognized

Eight honorary degrees were among the more than 4200 degrees conferred by the University at Spring Convocation 1989.

On June 5, the first day of Convocation, an honorary degree was conferred upon Ronald K. Banister, chief executive officer of Banister Continental Ltd., a corporation specializing in pipeline, marine, utility, civil and industrial construction. A former of the University's Board of Governors and head of its building committee, he is credited with some of the best planning and development of construction in the University's history.

Also on June 5, Lloyd MacLean, surgeon-in-chief of the Royal Victoria Hospital in

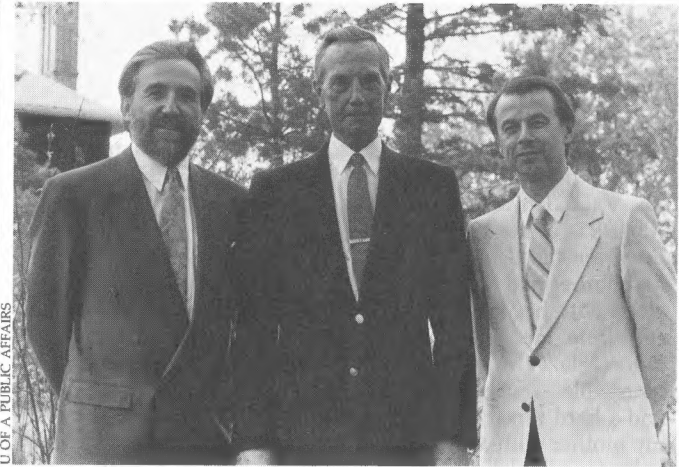
Montreal and professor of surgery at McGill University, received his honorary degree. A '49 MD graduate of the U of A, Dr. MacLean is recognized as having trained more clinician/scientists than any other surgeon in the country.

On June 6, the superintendent of Edmonton Public Schools, Michael Strembitsky was granted an honorary degree. The longest-serving (17 years) school superintendent in a large urban jurisdiction in Canada, he is credited with developing a school decision-making model which gives parents, students, teachers and administrators clearer voices in educational matters.

On the third day of Convocation, June 7, a '53 LLB graduate of the University and past-president of the Canadian Bar Association, Thomas Walsh, was in the honorary degree spotlight. Mr. Walsh leads the Calgary law firm Walsh Young and was appointed the president of the Calgary Chamber of Commerce in 1987.

Two honorary degrees were conferred on June 8. One went to Chester Cunningham, executive director of the Native Counselling Services of Alberta, which he founded in 1970, mortgaging his house and farm to do so. Mr. Cunningham has been a moving force behind many positive initiatives relating to the interface between the justice system and the aboriginal community, and he established the first aboriginal alcohol education program in Canada.

The second honorary degree awarded on June 8 went to Stephen Ramsankar, principal of Alex Taylor Public School in Edmonton. During his 27 years with the public school system, he has introduced a number of innovative programs. At Alex Taylor, an inner-city school, these include a nutrition program, police-in-school



Teaching Excellence Celebrated: Rutherford Teaching Award recipients Franco Pasutto, professor of pharmacy and pharmaceutical sciences, William Taylor, professor of pediatrics, and Josef Takats, professor of chemistry (shown left to right) were present at a reception held in their honor in May. The fourth 1989 recipient, Terry Davis of the Faculty of Nursing, had an out-of-town engagement and was unable to be present. However, she was able to share the spotlight with the others at Spring Convocation, where all four received plaques acknowledging their teaching excellence to go along with the \$2,500 cheques they had received earlier.

liaison, and a seniors' drop-in centre.

After a three-day break, Convocation resumed on June 12, at which time an honorary degree was conferred upon Ursula Franklin, a professor emerita of the University of Toronto, where she distinguished herself in the study of metallurgy in ancient cultures during her 21-year tenure with the department of metallurgy and materials science. Dr. Franklin is recognized for her contributions to the understanding of the human dimensions of science and technology.

On the final day of Convocation, June 13, the honorary degree recipient was consumer advocate Ethel Marliss of Edmonton. An honorary life member of the Consumers' Association of Canada, Mrs. Marliss was a member of the First Advisory Committee of Consumers in Ottawa and chaired an ad hoc committee to plan a nation-wide program on the use and abuse of drugs. She is particularly well known in Edmonton and area for the

down-to-earth advice she dispenses via radio and newspaper.

Persons Case Recalled

On April 18, 1929 the Privy Council in London, England decided that "the word 'persons' includes members of the male and female sex ... and that women are eligible to be summoned to and become members of the Senate of Canada."

Prior to this Privy Council judgement only male persons could be appointed to the Canadian Senate. This restrictive interpretation of the term "persons" had been upheld by the Supreme Court of Canada before five Alberta women carried the case forward to the highest Canadian court of appeal at that time, the Privy Council.

To celebrate the 60th anniversary of the judgement, a number of events are being planned for the University this fall. One is an exhibition which will illuminate the lives of the five co-appellants in the case: Emily Murphy, police



Breaking Ground: With Board of Governors chair John Schlosser her right-hand man and Myer Horowitz at her left, Ruth Timms Nishioka, '54 Dip(Ed), '55 Dip(Ed), '57 BEd, takes part in the sod-turning ceremony for the Timms Collection Centre made possible by a bequest from her parents. The ceremony held in late July was the last such event of Dr. Horowitz's presidency. The Centre is scheduled to open in 1992.

magistrate and the driving force behind the "Persons" Case; Irene Parlby, MLA; Nellie McClung, former MLA, writer and journalist; Henrietta Edwards, Alberta president of the National Council of Women of Canada; and Louise McKinney, former MLA and provincial president of the Women's Christian Temperance Union.

The exhibition highlighting the lives of these women will be mounted in the foyer of the old Rutherford Library from October 16 to 28 and noon-hour events are planned in conjunction with it.

Public forums are scheduled for October 18. An afternoon session (Humanities Centre L-3) will feature biographical sketches of the women and a legal assessment of the case. The evening session (Tory L-11) will include speakers presenting current views of women's issues.

Also planned are an exhibition of Alberta women's art at the Edmonton Art Gallery and an October 20 reception at University House hosted by the Women's Legal Education and Action Fund (phone Louise McNamee at 488-9777 for tickets).

Graduates Sweep Haultains

University of Alberta graduates made a complete sweep of the 1989 Sir Frederick Haultain Prizes. All three of the \$25,000 prizes awarded by the Alberta Government to recognize innovation and contribution to society went to alumni of the University.

Thomas D. Baker, '47 BEd, '49 MEd, of Evansburg received the Humanitarian Prize in recognition of his contributions during 18 years of service as chair of the Alberta Cancer Board.

Roy Berg, '50 BSc(Ag), who was awarded the Science Prize, is a former dean of the

Faculty of Agriculture and Forestry at the University and a highly respected animal geneticist.

The winner of the Arts Prize, **W.O. Mitchell**, '43 BA, '75 LLD (Honorary), is a celebrated Canadian author known for his evocative fiction. His books include *Jake and the Kid*, and *Who Has Seen the Wind*.

Biochemist Honored By London's Royal Society

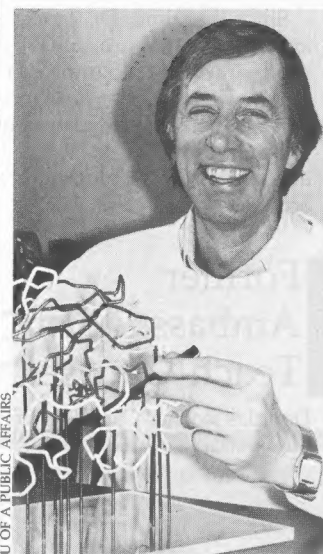
Michael James, U of A professor of biochemistry and one of the world's leading protein crystallographers, was named a fellow of the Royal Society of London earlier this year.

"This is a very great honor and represents recognition that is perhaps second only to a Nobel Prize," says W.A. Bridger, chair of the

University's Department of Biochemistry.

Dr. James is only the third faculty member at the U of A to receive this honor in the Society's 75-year history. (Chemist Raymond Lemieux and physicist Werner Israel preceded him.) Of 40 new fellows named by the London society this year only 11 were from outside the United Kingdom; Dr. James was the only Canadian.

Born in Vancouver, the new Royal Society of London fellow grew up in Toronto and Winnipeg, where he studied chemistry and chemical crystallography at the University of Manitoba. He came to Alberta after studies at Oxford University, where he obtained his doctoral degree under the tutelage of Dorothy Crowfoot-Hodgkin, who received her Nobel Prize when he was a student in her lab. After a year as a postdoctoral fellow in the chemistry department at the



Biochemist James

U of A, he moved across campus to the biochemistry department in 1968 and was given the challenge of establishing the first laboratory in Canada devoted to the determination of protein structure by means of x-ray crystallography.

Share the EXCITEMENT SOYEZ DE LA FÊTE

Join us
for a week of celebration!

For more information
please call Public Affairs
(403) 492-2325

PRESIDENTIAL INSTALLATION WEEK OCTOBER 10-14

Sponsored by Alma Mater Fund

An Invitation to Alumni

On Wednesday, 11 October, Dr Paul Davenport will be installed as the tenth president of the University of Alberta. Alumni are invited to "Share the Excitement" by participating in the numerous events scheduled for installation week.

Among the public events planned for the week are a Mini-Course Program in the Business Building, "Saturday Morning at the Law School," a Collections Walk, a Medicine Open House, a reception at Faculté Saint-Jean, and an International Festival at HUB International. All of these events will take place on Saturday, 14 October.



University
of
Alberta

Since that time, Dr. James and his research group have used x-ray crystallography to determine the three-dimensional structure of dozens of proteins at especially high resolution or accuracy.

Former Ambassador to Teach Course

Douglas Roche, Canada's first ambassador for disarmament and a former chair of the United Nations' disarmament committee, has begun a

three-year term as a visiting professor in the Department of Political Science.

He will teach "Canada's Role in Global Peace and Security," a senior undergraduate and graduate course which he initiated and developed. He will also be available to consult with students and act as a resource person.

A former member of parliament for Edmonton Strathcona and Edmonton South, Mr. Roche was appointed Canada's ambassador for disarmament in 1984. He has also served as president of the UN

Association in Canada and in 1985 was elected honorary president of the World Federation of United Nations Associations, the first Canadian to receive this honor. He is also a former international president of Parliamentarians for World Order.

Mr. Roche is the author of eight books, including *Justice Not Charity: A New Global Ethic for Canada*. His recent work *United Nations, Divided World* is a contemporary examination of the UN amidst the global crisis of the nuclear arms race and economic development.

Around and About

■ A Centre for International Business Studies has been created in the Department of Marketing and Economic Analysis. The Centre's organizers are aiming to promote Alberta's human resource base in international business by offering educational programs for managers and by encouraging interaction between University students and staff and businesses involved in exporting goods and services.

■ Hiroomi Umezawa, Killam Professor of Science, has been elected a fellow of the Royal Society of Canada in recognition of his lasting contributions to physics over more than four decades. Professor Umezawa was a pioneer in the post-war development of quantum field theory, a mathematical tool which has proven remarkably successful in dealing with numerous diverse problems in rather broad areas of physics.

■ The University is offering the first courses in its new certificate program in gerontology this fall. The program, sponsored by the campus Centre for Gerontology and the Faculty of Extension, is designed to assist nurses, social workers, administrators and staff at nursing homes and hospitals. It is designed to cover the many aspects of dying and its impact on individuals and society.

■ Two individuals who made major contributions to education in Alberta passed away in

recent months. Stanley C.T. Clarke, professor emeritus of educational psychology, died suddenly in May. A graduate of the University, he became a faculty member in 1950 but left in 1959 to become executive secretary to the Alberta Teachers' Association. He returned to the University in 1968 and served as director of special sessions until his retirement in 1977. In April Wilfrid Pilkington, who served as associate dean of education for many years, passed away. Dr. Pilkington, also a U of A graduate, joined the Faculty of Education in 1952 after having spent 20 years as a classroom teacher and principal. He retired in 1974 and then taught an additional two years at Grande Prairie College.

■ The University was saddened recently by news of the passing of a former head (1957 to 1965) of the Department of Botany, Harold Brodie. An active member of the University community, Dr. Brodie was CKUA's first science correspondent and played an important role in the establishment of the Devonian Botanic Garden.

■ If you attended a yard sale at Rutherford House in 1940 and know where any of the furniture from that sale went, the Friends of Rutherford House would like to hear from you. The Friends are interested in photographing the original Rutherford House furniture in order to have the articles

reconstructed. The Friends' phone number is 422-2697.

■ A new institute at the University of Alberta will be "a place at which philosophical nursing research will be conducted in a continuous manner," says its director, June Kikuch. She hopes that the Institute for Philosophical Nursing Research will contribute to providing "the long overdue foundational knowledge required for the sound advancement of nursing as a learned discipline."

■ When Clare Drake stepped down as head coach of the Golden Bears hockey team to join the coaching staff of the Winnipeg Jets of the NHL, the University didn't have to look far for a replacement. On August 2 Bill Moores, a member of the Bears' coaching staff for 12 years was named as Drake's replacement. The new head coach is no stranger to the position, having led the club in 1980 and 1984 when Coach Drake was coaching Canadian national teams.

■ The Canadian Agricultural Engineer of the Year is U of A professor Jeremy Leonard. Also recognized at the joint meetings of the Canadian and American Societies of Agricultural Engineers held in Quebec this summer was Dr. Leonard's colleague Kenneth Domier, who received the CSAE's Maple Leaf Award for his teaching and research contributions and service to the Society.

Try to Remember the Kind of September when . . .

you had a "Fantastick" time in a Jubilaires production.

Try to Remember and If You Remember then Follow . . .

your friends to the Jubilaires Reunion, September 1990 as part of the Reunion Weekend celebrations.

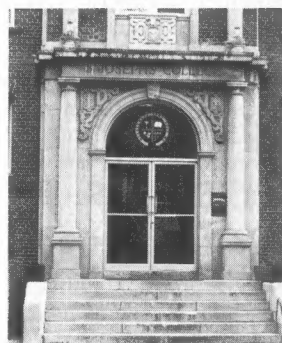
Let us know your Jubilaires production.

Were you cast, crew, music, production, management?

Do you still keep in touch with other Jubilaires types?

Like to help organize the fun?

Jubilaires Reunion 1990
c/o David Norwood
University of Alberta
3-20 University Hall
Edmonton T6G 2J9



St. Joseph's College Alumni

(Former Residents and Students)

Please mark your calendar for the following events where you will be warmly welcomed:

■ A special mass will be held at the College for all SJC alumni attending the University's Reunion Weekend '89. Brunch will follow.

12:30 p.m.
Sunday, September 24, 1989

■ The Annual Reunion Banquet for SJC alumni will be held at the College.

Saturday, November 4, 1989

Recently two Edmonton firms, both younger than five years old, have begun to attract the attention of the pharmaceutical world. Both Biomira Inc. and SynPhar Laboratories Inc. are applying techniques from the leading edge of pharmaceutical science to develop products for the diagnosis and treatment of disease. And both companies have origins in research conducted at the University of Alberta in the Faculty of Pharmacy and Pharmaceutical Science.

Biomira, now located in south Edmonton in the city's Research and Development Park, is exploiting pioneering advancements in biotechnology to create products for use in the diagnosis and treatment of cancer. Among those products it is currently testing is a cancer "vaccine" which has already proven effective in animal models.

Not many blocks away from the Biomira facilities SynPhar Laboratories is in the primary phase of work related to its mission to design, synthesize and test novel pharmaceuticals that show potential as antibiotic, anti-viral, anti-fungal, or anti-cancer agents.

Both firms value highly their continuing relationship with the University and its Faculty of Pharmacy and Pharmaceutical Sciences—and both are showing that appreciation handsomely.

Biomira: Biotechnology for the Fight Against Cancer

On a shelf in Tony Noujaim's office (the office he occupies as vice-president of Biomira Inc., not the one he has at the University of Alberta, where he is a professor of pharmacy and pharmaceutical sciences) sit four small cardboard boxes. While each box is printed with the name Truquant, they are not identical, as might be thought at first glance. A closer look reveals code letters—GI, BR, OV and OV2—which follow the words "cancer antigen."

These four products are the current stock-in-trade of Biomira Incorporated, an Edmonton-based company which is fast making a reputation for itself in cancer treatment facilities around the world with its leading-edge biotechnology.

While Biomira, which now occupies 2,400 square metres of space in the Edmonton Research and Development Park and employs more than 80 people, was established only four years ago, its roots go back much further than that, says Dr. Noujaim, a graduate of Cairo and Purdue Universities who came to Alberta in 1966 and helped establish the division of bionucleonics and radio-

Moving Into the Marketplace



pharmacy in the Faculty of Pharmacy and Pharmaceutical Sciences.

Dr. Noujaim points to a chance encounter that took place at the University's Faculty Club in 1980 as the seminal point in the company's history. At the Club, over a glass or two of beer, he and Michael Longenecker, a professor of immunology discovered that although they were working in different fields their research interests were remarkably similar. "Essentially, we were both working with the same tumor marker," recalls Dr. Noujaim, "so we decided to join forces."

The collaboration proved remarkably successful—"We created a kind of critical mass," says Dr. Noujaim—and five years later Biomira was launched with \$10 million in funding from one of Canada's largest private venture capital companies.

It was not, however, as easy as it sounds when put as baldly as that. In between the commencement of the collaborative effort and the funding of Biomira there was a great deal of hard work, both in the labora-

SynPhar Laboratories and Biomira Inc. are taking research from pharmaceutical science's leading edge into the marketplace.



At the heart of Biomira is the pioneering work done at the University of Alberta by Professors Noujaim and Longenecker.

Previous Page Contents of the Truquant GI radioimmunoassay kit.

Above Biomira provides a number of opportunities for graduates to put to use what they learned in the University classrooms and laboratories. **Top:** A Biomira staff photo. **Bottom:** A Biomira researcher at work at a biohazard hood.

Right Biomira founders Noujaim (left) and Longenecker.

tory—where the researchers developed proprietary processes for synthesizing those chemical groups on the surface of cancer cells that mark them as unique—and outside the lab—where finding the funds necessary to commercialize the laboratory work was an uphill battle.

"Nobody in Alberta would touch us," recalls Dr. Noujaim. Yet the professors believed in their work and persevered, at times using their own salaries to keep their entrepreneurial dream alive. Eventually, their doggedness paid off and they secured the support of the Montreal-based venture capital firm, Altamira Capital Corporation. The Altamira funding represented the largest placement of funds in a biotechnological firm in Canadian history, says Dr. Noujaim. ("You can imagine they would make darn sure we had something worthwhile," he adds.)

In 1987 Biomira Inc., whose common stock is now traded on the Toronto, Montreal and Alberta stock exchanges, went public—the first Canadian biotechnology firm to do so on a national scale—and raised an additional \$15 million.

At the heart of Biomira is the pioneering work done at the University of Alberta by Professors Noujaim and Longenecker, who succeeded in synthesizing the extremely



complex antigens specific to various tumors, making possible the manufacture of monoclonal antibodies custom designed to recognize and attach themselves to these tumors.

From this impressive scientific work have come the four Truquant (a contraction of "truly quantitative") diagnostic kits, which are simple blood tests designed to quantify the presence of cancer antigens in the blood of a patient. (Antigens are the distinctive markers identifying the presence of cells foreign to the body and thus capable of stimulating the production of antibodies.) The ability to measure the presence of cancer antigens is particularly useful in deter-

mining the efficacy of cancer therapy: a rising level of antigens would indicate ineffective therapy, a falling level would show progress, and the absence of antigens would be a sign that the cancer is in remission.

At present there are Truquant diagnostic kits for gastrointestinal cancers, ovarian cancer, breast cancer and prostate cancer. Another kit, for lung cancer, is planned for 1990.

While other laboratories around the world manufacture monoclonal antibodies for cancer diagnostics (most often by injecting tumor cells into mice and then collecting and sorting the resultant antibodies) the purity of Biomira's synthesized product puts the Edmonton company a step ahead of other firms marketing similar diagnostic tests.

A logical extension of the Truquant blood tests done *in vitro* (literally "in glass" — in a test tube) is using the same tumor-specific antibodies for *in vivo* (in the body) diagnosis. Research done at the University of Alberta under Dr. Noujaim's supervision has shown that it is possible to affix radioactive labels to the custom-designed monoclonal antibodies. When these are injected into a patient's bloodstream they locate and bind to the tumor cells for which they have specific affinity. Through the use of appropriate imaging devices it is then possible for clinicians to gain quite precise information about the size and location of tumors in the body.

Clinical trials with human patients have confirmed the promise of this work, and Biomira plans to commercialize products for *in vivo* cancer detection once regulatory approvals have been secured.

From the use of monoclonal antibodies for imaging it is only another step to directly employ these "magic bullets" in cancer therapy, using them to deliver radiation or chemotherapy agents directly to tumor sites, thereby sparing nearby healthy tissue. This technology has recently been pushed a step further with antibodies being genetically engineered to incorporate human components of the molecule, thereby minimizing rejection of this foreign protein when it is injected into humans.

Another exciting possibility, one which Biomira is also actively pursuing, is a therapeutic cancer vaccine. In animal tests Biomira's vaccine, which contains synthesized antigens designed to stimulate the body's immune system, sensitizing it to cancer cells and thereby ensuring that it will recognize and summarily destroy any such cells



that it encounters in the future, proved virtually 100 per cent effective.

While the history of cancer research has shown that the leap from mouse to human can be a long one indeed, particularly where an immune system response is involved, Dr. Noujaim and his colleagues at Biomira have very high expectations for the vaccine, which they envision being initially administered to patients whose cancer is in remission. This work, which caused a flurry of media interest and trading in Biomira stock when it was made public late last year, has now reached the stage where clinical trials using human patients are being planned.

Even if all goes well, however, the vaccine program will represent a major investment in time and money for the biotechnology company. Biomira officials have been quoted as saying that it could take up to 10 years and \$100 million to bring the vaccine to market, should it live up to its early promise.

If the vaccine program does prove successful the University of Alberta will directly benefit. Ties between Biomira and the University remain strong. Both Dr. Noujaim and Dr. Longenecker (also a Biomira vice-president) retain their University appointments, and much of the research funded by Biomira takes place at the U of A, the bulk of it in the Faculty of Pharmacy and Pharmaceutical Sciences.

"Without the support of the University this company would not be here," says Dr. Noujaim. In particular, he says, he and Dr. Longenecker owe "the greatest debt" to the late Gordin Kaplan who, as the University's vice-president (research) took "a lot of risks" in support of their vision.

He says that once Biomira was off the ground he and Dr. Longenecker agreed that they had a moral obligation to see that the University benefitted from any success that the company might achieve. As a result,

Biomira has been set up to give a return to the University on three levels. In the first instance \$1.25 million in preferred shares were donated to the University outright. Secondly, the University will receive a three per cent royalty on all discoveries made at the company. In addition, as already alluded to, substantial research contracts—to date, averaging \$300,000 per year—are given to University laboratories.

There is also another direct dividend for the University, says Dr. Noujaim: jobs. Of the 80-some people (half of them scientists; 20 of them PhDs) employed at Biomira, many are University of Alberta graduates who are getting the chance to put to good use what they learned in the University classrooms and laboratories.

SynPhar Laboratories: Specialists in Pharmaceutical Research & Development

In the clear sky above a morass of grey cloud 50 crane-like birds wing their way toward an unknown goal. The birds, their flight frozen in ceramic, are an artist's rendition of "taiho," the mythological bird esteemed by the Japanese for its perseverance.

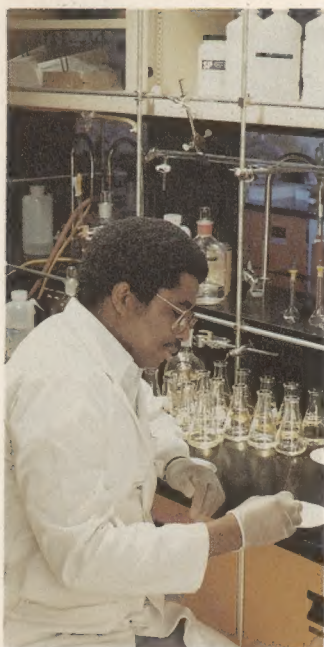
"The taiho is ever striving, ever flying towards its goal," explains Dr. Ronald Micetich, an adjunct professor with the Faculty of Pharmacy and Pharmaceutical Sciences at the University of Alberta and the president and chief executive officer of SynPhar Laboratories Ltd.

Behind him the 50 taiho persevere on a wall unlike any other in Edmonton: the \$200,000 ceramic mural was made in Japan by a special process and consists of eight sections, each almost a metre wide and more than two metres high. It reproduces an original painting by respected Japanese artist Susumu Maki.

The wall was a gift from Taiho Pharmaceuticals Co., Ltd. of Japan and duplicates one in their Tokyo head office. Through its



Above Top: Fifty imaginary birds pictured in flight on an unusual ceramic wall greet visitors to SynPhar Laboratories. Bottom: Adjunct professor Ronald Micetich in the laboratory.



Above SynPhar scientists are working to identify novel compounds which can be used against infectious disease.

Right SynPhar's many specialized facilities include this cold storage area used by the company's microbiology group.

North American subsidiary, Taiho Alberta Ltd., Taiho owns 80 per cent of SynPhar Laboratories; the remaining interest in the Edmonton-based pharmaceutical research and development company is held by Dr. Micetich personally.

(Taiho Pharmaceuticals is an arm of the family-owned Otsuka Group, a conglomerate of 26 Japanese companies. When Taiho, which now has annual sales exceeding \$650 million Canadian, was founded in 1963 the Otsukas cannily secured the participation of 50 of Japan's leading drug wholesalers — thus the 50 taiho in the painting.)

The taiho on the wall outside his office can be expected to have some personal significance for Dr. Micetich, who has seen some cloudy times himself. Born in India and educated there and at the University of Saskatchewan, from which he earned a PhD, he came to Alberta in 1963 to serve as director of pharmaceutical research for R&L Molecular of Edmonton. That firm was later acquired by the Canadian Development Corporation and the pharmaceutical work phased out.

Rather than relocating to the U.S. or eastern Canada, which would have been the easier course, Dr. Micetich decided to stay in Edmonton. In 1980 he accepted an appointment as an adjunct professor with the Faculty of Pharmacy and Pharmaceutical Sciences and with the help of connections he had made over the years was able to acquire research contracts to pay his salary and keep his work alive.

Some of those contracts came from Taiho Pharmaceuticals, and the Taiho-Alberta connection was to prove particularly fruitful. Of particular significance was the work that Dr. Micetich did in developing the drug now called Tazobactam (it was originally just YTR-830), which Taiho hopes to have on the market in the next 12 to 24 months.

Tazobactam is one of the most effective beta-lactamase inhibitors yet developed, says Dr. Micetich. And it results from work done at the University of Alberta, where it was first synthesized, he adds.

The world market for drugs such as Tazobactam which are used in conjunction with beta-lactam antibiotics (the antibiotic class to which penicillin belongs) is enormous says Dr. Micetich, who gives a description of a star war on the cellular level as he explains the purpose of such drugs.

Beta-lactam antibiotics, he says, are the most important antibiotic group prescribed today to fight various forms of bacterial infection. They are absolutely non-toxic (although some individuals are allergic to

them) and therefore have been used very extensively—even at times when the indications for their use are not there. As a result of this widespread use certain bacteria strains have developed a resistance to the antibiotics. Investigations at the cellular level have shown that an important mechanism of resistance involves enzymes produced by the bacteria. Known as beta-lactamases, these enzymes attack and destroy the antibiotics before they can do their work.

As a countermeasure pharmaceutical companies, desirous of giving their antibiotics renewed mastery over "resistant" bacteria, have been developing their own star wars defence: chemical compounds capable of blocking the beta-lactamases before they are able to strike. The first of these compounds are now on pharmacists' shelves and vying for a world market estimated to be in excess of \$100 million. Into this arena Taiho, in co-operation with the pharmaceutical giant Lederle, will soon be entering the Alberta-developed Tazobactam, which will be used in tandem with the antibiotic Pypericillin.

In 1986, prompted by the success of the Tazobactam work and other projects on which he had collaborated with Taiho, Dr. Micetich approached the Japanese company hoping to formalize an expanded research agreement. His timing couldn't have been better. Taiho was looking to cultivate a presence in North America and, well satisfied with the work he had done, was willing to give him a leading role.

In fact, Dr. Micetich admits that the results of his visit to Taiho went beyond even his most optimistic expectations. When arrangements were finalized in 1987, Taiho created Taiho Alberta (of which Dr. Micetich is chief executive officer) as a wholly-owned subsidiary and the centre of its North American operations. SynPhar Labo-



ratories, a joint venture between Taiho and Dr. Micetich, was set up to develop innovative chemotherapeutic agents against disease.

SynPhar's inauguration in 1987 marked several firsts: it was the first ever Canadian-Japanese pharmaceutical venture, it was the first true pharmaceutical research and development firm in western Canada, and it was the first overseas research company associated with Taiho Pharmaceuticals.

Dr. Micetich says that at present SynPhar is in the primary phase of pharmaceutical research, its scientists engaged in identifying and synthesizing novel agents to combat bacterial, viral and fungal infections as well as cancer. As promising compounds are identified they will be subjected to further tests, including toxicity studies and eventually lengthy clinical trials. Once production is imminent, he says, Taiho Alberta will establish a pilot plant manufacturing facility, followed by a full-fledged manufacturing and marketing program.

The long-range plan is for Taiho Alberta to manufacture and distribute Taiho Pharmaceutical's future products to markets in Canada, the United States, Europe and possibly South America. These products will include not only drugs developed at SynPhar but new drugs emanating from research at Taiho centres in Japan and products licensed to Taiho from international research sources.

Taiho Alberta has also been given the mandate to identify pharmaceutical research initiatives with potential for commercialization taking place at universities and other institutions elsewhere in North America with an eye to acquiring the rights for Taiho. At present, says Dr. Micetich about 8 to ten projects are being closely investigated, and now that Taiho's interest is becoming fairly well known, he is regularly receiving proposals from groups from all over North America and even beyond.

The in-house research and development is also going well. Since its establishment SynPhar has developed robustly. Originally it occupied just over 900 square metres of leased space in premises that had been vacated by the Alberta Research Council when the Council moved to its new south Edmonton complex. The young pharmaceutical research and development firm is now planning its second expansion, at which time it will occupy almost three times the space. And the space is now owned by Taiho Alberta, which recently purchased the entire commercial block.

The two Taiho-associated companies in

Alberta now employ more than 50 persons in a work setting which Dr. Micetich describes as an amalgam of East and West. SynPhar, he says, has embraced the Japanese corporate ideal in which the employees are seen as the company's chief resource. Evidence to support this is provided by the company's excellent staff facilities, including large and attractive lounge and staff meeting areas. Each working day begins with a short meeting in which all staff take part.

Another attractive benefit for SynPhar's staff is an exchange program with Taiho which permits SynPhar scientists to work in Japan and Japanese scientists to spend extended periods at the Edmonton facility.

Canadian-Japanese ties are also being forged through the Taiho Endowed Research Fund, which recognizes the important role that the University of Alberta has played in making SynPhar and Taiho Alberta possible, as well as the continuing co-operation of the University's Faculty of Pharmacy and Pharmaceutical Sciences.

Under the terms of the agreement which established the Fund in 1987, Taiho agreed to contribute \$50,000 per year for three years. By 1990, thanks to double matching grants from the Alberta government, the total endowment will be \$450,000.

The interest earned by the Fund is available to support extended visits by U of A faculty members or graduate students in medicine, dentistry or pharmacy to Japanese universities, or vice versa; to provide seed money for collaborative research projects between faculty members at the U of A and faculty members at Japanese universities; to provide travel funds for distinguished scientists from Japan to visit the U of A, or vice versa; and to support scientific conferences or workshops jointly organized by scientists from the U of A and Japan.

Naturally Dr. Micetich is pleased with the trust that Taiho has shown in him and he is committed to making a success of SynPhar and Taiho Alberta. In the introduction to SynPhar's corporate brochure he pledges that he and his staff will work hard to justify the high expectations held for them: "We, each and every member of the staff of SynPhar Laboratories Inc., are dedicated to the ideals of Taiho Pharmaceutical Co., Ltd. and intend to prove conclusively in the years ahead that the trust shown in us by Taiho is fully justified."

For inspiration, they need look no further than the 50 taiho flying above the clouds on a ceramic wall. ■

SynPhar has embraced the Japanese corporate ideal in which the employees are seen as a company's chief resource.

Are You Unemployed?

Do you require assistance in making yourself more saleable in the competitive job market? If you do and you are a University of Alberta graduate, plan to attend one or both of the **Alumni Employment Workshops** scheduled for **Thursday, 19 October 1989** on campus.

These workshops will be conducted by personnel from the University's Career and Placement Services and will cover the following areas:

Resumé Writing Workshop

9:00 a.m. to 12:00 noon

- Learn about the different types of resumé and determine which one will work best for you.

- Receive helpful hints on how to successfully complete application forms.

Job Search/Job Interview Workshops

1:30 p.m. to 4:30 p.m.

- Analyze the steps in the job search process.

- Learn how to research prospective employers.

- Apply effective job interview skills.

- Prepare for "typical" interview questions.

Cost for each workshop is \$10 or \$15 for both. If you are an unemployed alumnus, register (before 16 October) by contacting:

Office of Alumni Affairs
430 Athabasca Hall
University of Alberta
Edmonton, Alberta T6G 2E8
(Telephone 492-3224)

Law Faculty Representative Sought

A graduate from the Faculty of Law is being sought to fill an opening on Alumni Council. The position of Law Representative is now vacant, and an individual is needed to represent the faculty for a one-year term.

Under the terms of the Alumni Association constitution, a person must have graduated from a faculty in order to represent it on Council, and must be nominated by three other graduates from that faculty.

Individuals wishing to make nominations or willing to serve, are invited to contact Sandra Kereliuk (492-3224) for further information. Nominations are requested by October 13, 1989.

Drama Association Planned

The Department of Drama has announced that it is in the process of organizing a constituent alumni association. To be known as the Drama Department Alumni Association, this new group will be formally established later this fall.

Drama alumni are encouraged to submit current addresses and resumé to the Department of Drama (3-146 Fine Arts / University of Alberta / Edmonton T6G 2J9) and further information can be obtained from Judy Peacock (434-5302) or Luanne Currie (492-2271).

Alumni should watch for "Alumni Evenings" which will take place at Studio Theatre productions this season and will provide an opportunity for alumni to gather after the show. For more information about the alumni evenings, contact the Studio Theatre Box Office at 492-2495.

Director Receives Honors

The summer of 1989 has been a memorable one for alumni affairs director Susan Peirce.

Ms. Peirce has two newly-gained professional honors by which to remember this summer. In July the University of Alberta alumni affairs director was elected to the Board of Trustees of the Council for Advancement and Support of Education as trustee-at-large representing Canadian institutions.

Based in Washington, D.C., CASE is North America's largest organization specializing in

professional development activities for individuals working for the advancement of higher education—fund raisers, alumni administrators, public relations and communications specialists, and so on.

The affairs of the organization, which is also a higher education lobby group, are overseen by the 32-member board to which Ms. Peirce was elected for a three-year term. She is the only Canadian on the board.

Earlier this summer, Ms. Peirce's contributions as an alumni affairs administrator were recognized by the Canadian organization of university and college advancement professionals. At the annual meeting of the Canadian Council for the Advancement of Education which was held in Guelph, Ontario in June, Ms. Peirce was named the recipient of the 1989 Outstanding Achievement Award in the field of alumni affairs.

Host Families Required

In the Summer 1989 issue of *New Trail* magazine, alumni families were asked to volunteer to participate in the Host Family Program which attempts to introduce foreign students to a warm, inviting environment and promote cross-cultural sharing of information and experiences.

While the response has been excellent, there is still room for more volunteer families.

Families will participate in an orientation program and will be matched with foreign students by faculty of study where possible. The host family has no obligations regarding finances or living arrangements for the student; family members serve as resource people and friends.

Graduates who are interested in this program or would like further information are invited to call the International Centre at 492-2692 or give them a visit at 172 HUB International.

RENEWAL NOTICE

If you haven't already sent in your 1989-90 dues payment for your Faculty's constituent alumni society, consider joining by sending in your dues today. Membership rates are:

Dental Alumni Association	\$50
Medical Alumni Association	\$50
Native Alumni Association	\$25
Pharmacy Alumni Association	\$20
Forestry Alumni Association	\$15

Send your cheque (payable to the society) to:

Office of Alumni Affairs
430 Athabasca Hall
University of Alberta
Edmonton, Alberta T6G 2E8

Please indicate your graduating year and degree.

NURSING ALUMNI ASSOCIATION

Fall Tea & Annual General Meeting Tuesday, 17 October 1989

LOCATION: Bernard Snell Hall
WC Mackenzie Health Sciences Centre
Edmonton
TIME: 7:00 p.m. - 9:00 p.m.
RSVP: (YES only, by 11 October 1989)
Barbara Chaffey
Alumni Office
University of Alberta
Phone: 492-4523

All members and interested nursing alumni are invited to attend this event.

OTTAWA, ONTARIO

Fall Event November 1989

GUEST SPEAKER: Dr. Peter Meekison
VP (Academic)
University of Alberta
INFORMATION: Barbara Richardson
#6, 71 Sweetland Ave, Ottawa K1N 7T9
Phone: 233-3898 (R)

All Ottawa-Hull and area alumni and friends are invited to attend the fall event. Watch your mail for your invitation and further details.

KELOWNA, B.C.

Brunch Sunday, 22 October 1989

TIME: 11:00 a.m. - 1:00 p.m.
GUEST SPEAKER: Dr. Paul Davenport
President
University of Alberta
RSVP: (By 18 October)
Shawn Spelliscy
344 Poplar Point Drive, Kelowna V1Y 1Y1
Phone: 860-3185 (R)

All Okanagan and area alumni and friends are invited to attend and meet the new President. Watch your mail for further details.

PHARMACY ALUMNI ASSOCIATION

Wine & Cheese Social/Annual General Meeting November 1989

All members and interested pharmacy alumni are invited to attend these events, which will be held in conjunction with the Faculty of Pharmacy's 75th anniversary celebrations. Members should watch their mail for further details and non-members may contact Barbara Chaffey of the Alumni Office at 492-4523 for further information.

TORONTO, ONTARIO

Fall Luncheon and Annual General Meeting Sunday, 29 October 1989

LOCATION: The Loews Westbury Hotel
475 Yonge Street
(College Street Subway Station)
TIME: 12:30 p.m. - Reception (Cash Bar)
1:30 p.m. - Luncheon
GUEST SPEAKER: Dr. Paul Davenport
President
University of Alberta
RSVP: (By 24 October)
Robert Morrice
99 Parkhurst Boulevard, Toronto M4G 2E5
Phone: 421-3346 (R)

Watch your mail for further details. Plan to attend the CIAU Football Championships, the Vanier Cup, at the SkyDome on Saturday, 18 November 1989.

VICTORIA, B.C.

Fall Event Tuesday, 17 October 1989

LOCATION: The Pacific Geoscience Centre
9860 West Saanich Road.
TIME: 7:00 p.m. - Tour of Building
7:45 p.m. - Sandwiches & Refreshments
8:15 p.m. - Talk by Robert Horner
COST: \$3.50 per person
(Free parking in front of Centre)
(By 3 October)
RSVP: Art Webb
1491 Eric Road, Victoria V8N 2Z7
Phone: 721-1273

Mr. Horner, a seismologist, will present general information on earthquake causes and probabilities along the Coast, with particular reference to Vancouver Island and the adjacent mainland. (To reach the Centre take McTavish Road off Highway 17 to the West Saanich Road intersection. Turn right on W.S. road, then to Geoscience Centre.)

CALGARY, ALBERTA

Dinner & Dance Saturday, 21 October 1989

LOCATION: Calgary Golf and Country Club
TIME: 6:30 p.m. - Reception
7:30 p.m. - Dinner (Dance to follow)
ADMISSION: \$40 per person
GUEST SPEAKER: Dr. Paul Davenport
President
University of Alberta
RSVP: (By 17 October)
Linnet Murray
4 Roselake St NW, Calgary T2K 1K9
Phone: 282-6215 (R)

Plan to attend and meet Dr. Davenport. Your new executive has some exciting new events planned for all Calgary alumni and friends.

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HISTORICAL FOOTNOTE Practice review for public protection

Since 1981 Chartered Accountants practicing public accounting in Alberta have undergone mandatory reviews of their practice policies and procedures. The reviews are conducted to ensure that the high professional standards are maintained by Alberta CAs.

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Evelyn Wright, '72
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Michael Stanley, '77
Kathleen Daintith, '78
Darrin Berlin, '82
Larry Karsch, '82
Robert Palamarek, '82
Elisabeth Sonnenberg, '82
Colleen Troitsky, '82
Cathy Holroyd, '86



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GUARDIAN





Pharmacy Faces the Future

While it is celebrating its past, the University's Faculty of Pharmacy and Pharmaceutical Sciences is very much looking to the future in its 75th anniversary year.

By Rick Pilger

Above: The Dentistry-Pharmacy Centre, a campus landmark. Right: Communication skills are emphasized in the Faculty's professional practice curriculum. Here, third-year student Terese Tsuruda explains the use of a product to Nancy Rae, one of the Faculty's three professional practice co-ordinators.

Beneath the uncanny, translucent blue of the Alberta sky the dark brown bricks of the University of Alberta's Dentistry-Pharmacy Centre provide a solid contrast. For almost seven decades these bricks have been a University landmark and, were it not for the stray vapor trail of a passing jet anchoring the scene to the present, under this enchanted sky it would be possible to shed those decades, slipping back in time to when the building—then known as the Medical Building—was new.

Inside the Centre's doors, however, time takes on a different face. A visit to one of the building's major tenants, the Faculty of Pharmacy and Pharmaceutical Sciences, pushes the clock forward. In the Faculty's labs, researchers test and seek the medicines of tomorrow: "magic bullets" designed to carry their killing force directly to malignant cells, "vaccines" to further the fight against cancer, agents to allow antibiotics to gain their mastery over "resistant" bacteria strains, pharmaceuticals to lower blood pressure, and other drugs potentially

useful to combat a wide spectrum of disease conditions.

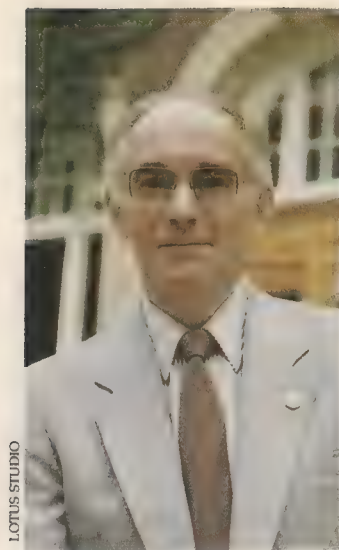
In its other dimension, the preparation of its graduates for professional practice—whether that be in the community, in a hospital setting, in the pharmaceutical industry, or within a government regulatory agency—the Faculty is also looking to the future. In this, its 75th anniversary year, the Faculty has reorganized its courses into a five-year program in recognition of a fundamental change which has taken place since instruction in pharmacy first took place at the University of Alberta.

That was in 1914. In the shadow of the war clouds that had begun to form over Europe the fledgling university in Alberta introduced a new course of study. On April 13, 1914, following some two years of negotiations with the Alberta Pharmaceutical Association, the University established the Department of Pharmacy in the School of Medicine.

The 1915-16 University Calendar, the first to list the Department of Pharmacy, describes the two programs in pharmacy of



LOTUS STUDIO



LOTUS STUDIO

In May of 1921 the first BSc(Pharm) class, consisting of three students, graduated with the unique distinction of being the first graduates of a four-year pharmacy degree program in the British Empire.

ferred at that time: "one of only one session in duration leading to the Licencing Diploma conferred by the Alberta Pharmaceutical Association; the other, of two sessions, to the Phm. B. degree." In the first year the pharmacy students (in 1915-16 there were 11 of them in the total University registration of 439) are required to take courses in chemistry, botany, pharmacy, *materia medica*, pharmacology, and toxicology. Physics and Latin are also required, but only for the PhmB degree students. The same courses, taught in greater detail, and a course in bacteriology are offered to the degree students in their second year.

Practical experience was considered of extreme importance in those early years and before entering university the would-be pharmacist was required to serve a three-year apprenticeship. Prospective apprentices had to be at least 14 years of age and to have completed grade 10.

At the University of Alberta the course of studies in pharmacy was originally put under the wing of Dr. H.H. Moshier of the physiology department. However, in 1916 with no easy end to the War in sight, Dr. Moshier enlisted for active service, was commissioned with the rank of major, and left for Europe, taking many of the pharmacy and medical students with him. Following Dr. Moshier's death short months after his departure, Red Deer pharmacist H.H. Gaetz was given charge over the pharmacy course. Prof. Gaetz, who had arrived in Alberta from Nova Scotia in 1884, served his apprenticeship in Calgary and then established in Red Deer the first drug store between Edmonton and Calgary.

In 1917 the status of the Department was

raised to that of a School and under Gaetz's leadership the degree program was soon revised: the PhmB degree (which, in fact, had never been awarded at the University of Alberta) was dropped and a four-year course leading to the degree of Bachelor of Science in Pharmacy was substituted in 1918. (That same year the one-year diploma course was done away with and a two-year licentiate course leading to a diploma in pharmacy was legally established as the minimum requirement for licensure in Alberta.)

In May of 1921 the first BSc(Pharm) class, consisting of three students, graduated with the unique distinction of being the first graduates of a four-year pharmacy degree program in the British Empire.

Following the Second World War the diploma program was phased out and the BSc(Pharm) degree became the sole route to licensure. Now, as the Faculty celebrates its 75th anniversary the BSc(Pharm) curriculum—much revised over the years (in fact, from the mid 1930s until well into the '60s it was a three-year program)—is being reorganized into a five-year course of studies. This includes a pre-professional year (the first year of the five-year program) which students must complete prior to their acceptance into the Faculty.

A person who played a leading role in designing the new five-year program is Dick Moskalyk, a native of Saskatchewan who studied pharmacy in that province before joining the U of A staff in 1963 and earning his PhD degree from the University two years later. He explains that the change to the five-year program reflects continuing



U OF A ARCHIVES

Above: Acting-Dean Moskalyk. Right: A significant evolution has taken place in the practice of pharmacy. The students in this mid-1950s pharmacy lab graduated into a profession which was much more product-oriented.

developments in the Faculty and was made necessary by the important evolution that has taken place in the practice of pharmacy.

Dr. Moskalyk, who is serving as the Faculty's acting dean during its 75th anniversary year, says that pharmacy has changed from a product-oriented to a patient-oriented profession. Consequently, he says, his Faculty has had to adapt its curriculum over the years to get more and more involved in a patient-oriented approach.

"What happened over quite a few years is that we kept crowding more and more into our four-year program, until it ended up that our students were taking 25 full courses in four years, whereas the University average is five full courses a year. So, we essentially had a five-year program squeezed into four. The new curriculum still has only 25 courses (five of these in the pre-professional year). Some are new, some are revised, some have added material, but in large measure we have simply taken what we have been squeezing into four years and spread it over five."

Merv Huston, who got his start in pharmacy as an apprentice in his father's drugstore in Ashcroft, B.C., agrees that the role of the pharmacist has undergone a profound change in recent years. "When I graduated a pharmacist was important for what he did, latterly he's been important for what he knows. In other words, in present pharmacy the pharmacist works with the doctors and the nurses and the patients as a consultant on drug medication and other matters of pharmacy—so the pharmacist these days is patient-oriented and service-oriented.

"In the earlier days it was more a matter of getting a number of pills or prescriptions into a patient's hands. That was a responsibility, of course—I'm not denigrating it—but the more recent developments have expanded pharmacy enormously and

therefore the educational requirements have had to be increased."

Dr. Huston earned the BSc(Pharm) degree from the University of Alberta in 1937 and his MSc four years later. He then joined the staff of the School of Pharmacy and returned to it after earning his PhD from the University of Washington in 1943. After the resignation of A.W. Matthews in 1946, he was named acting director of the School, an appointment which was confirmed on a continuing basis in 1948.

(Dr. A.W. Matthews, who now lives in Toronto, was one of the three members of the University's first pharmacy degree class in 1921. He joined the faculty of the University's pharmacy School in 1923 and in 1941 became the first Canadian pharmacy faculty member to be granted the PhD degree, which he earned at the University of Florida.)

When the School of Pharmacy was granted Faculty status in 1955, Dr. Huston became its first dean, and he served in that capacity until 1978. During his tenure the pharmacy school developed its reputation for excellence in the pharmaceutical sciences. (In 1968 the Faculty was renamed Pharmacy and Pharmaceutical Sciences.)

Says Dr. Huston: "The biggest thrust that I initiated when I became director and later dean, was to initiate a research program. I could do that once I had my PhD; I could supervise and teach people at the master's level and later the PhD level. This enabled the Faculty to develop a research potential and a research effectiveness which had an impact on the contributions the staff could make to the students going through and to science in general."

In 1961 Kenneth M. James, now a member of the pharmacy faculty at Dalhousie University, successfully completed his research under Dr. B.E. Riedel of the U of A and became the first student to receive the Doctor of Philosophy degree from a Canadian pharmacy school. At fall convocation in 1963 Mangalath Nayar, a graduate student from India, received the second PhD degree to be awarded by the Faculty—this was also the second PhD ever given for work in a Canadian pharmacy school.

Another milestone of Dr. Huston's tenure as dean occurred in August 1972 when his Faculty played host to the first radiopharmacy conference held in Canada. Radiopharmacy—the application of radiation and radioactive compounds in medical diagnosis and therapy—was to become a major thrust within the school and in 1974 the Edmonton Radiopharmaceutical Cen-



A.W. Matthews



G.V. Holmes



H.R. Gaetz

Above: Yearbook photos of the first graduates of the BSc(Pharm) program.

Left: Today's patient-oriented pharmacist is an important member of the health-care team. Here, pharmacist Kelly Walker (second from left) attends rounds in Edmonton's Misericordia Hospital.



R. CRACK/MISERICORDIA HOSPITAL



The challenge for Dr. Huston's successors has been to match the strides made in the pharmaceutical sciences at the University with innovations to meet the demands made upon the graduates by the changing nature of the professional environment.

Above: Operator Vishwanatha Somayaji at the console of the Faculty's nuclear magnetic resonance spectroscope.

Right: Pharmacist Brenda Madsen counsels a patient about to be discharged from hospital about the medications she will take at home.

tre, which continues to be located within the Faculty, was established, the first multi-hospital service facility for provision of radiopharmaceuticals on this continent.

In 1978, the year that Dr. Huston retired as dean, the official opening of the Faculty's \$250,000 SLOWPOKE II nuclear reactor (SLOWPOKE is an acronym for Safe, Low Power, Critical, Experiment) was celebrated. The reactor was the first in Western Canada and helped the University of Alberta to become the first institution in North America to initiate a graduate program in radiopharmacy at the PhD level.

The challenge for Dr. Huston's successors—Dr. G.R. Van Petten, who served as dean from 1978 until his untimely death in 1980, Dr. G.E. Myers, who served on an interim basis until 1980, and Dr. John Bachynsky, who stepped down this summer—has been to match the strides made in the pharmaceutical sciences at the University with innovations to meet the demands made upon the graduates by the changing nature of the professional environment.

The challenge is one which has been passed on to Acting-Dean Moskalyk. "The basic elements of a strong academic program are here," he says. "We have long had strength in the pharmaceutical sciences. We have people with excellent reputations in bionucleonics, medicinal chemistry, therapeutics, and all the other areas. From a basic sciences standpoint I am very proud of our people. We're trying as hard as we can to

build up our professional practice component, but without additional funds being available, it's not easy."

On the other hand, he is quick to point out the "excellent co-operation the Faculty is receiving from the Alberta Pharmaceutical Association and the practitioners in the province. And he emphasizes that, in spite of the constraints imposed by the current economic climate which the Faculty is faced, progress is being made.

"Our undergraduate program has undergone some big changes, and I'm very proud of the product we put out now," says the acting-dean. "I think our people are very well trained, very capable of practicing pharmacy the way we would like to see it practiced. I believe that the public is better served in general in this province because of the changes we have made to our undergraduate curriculum, and we are hoping for an even better product with the new five-year program.

"And I guess that the tangible evidence that we must be doing something right is a message that I got across my desk within the last couple of weeks. It informed us that our students came first in the national pharmacy exams which the Pharmacy Examining Board of Canada runs every year to allow pharmacists some mobility across Canada. Our students came first both in terms of the percentage who passed and the marks that they achieved—we obtained the highest average mark for Canada, plus we had the most people passing the exam."

For a moment, the acting dean reflects back over the years. Outside his window the blue of the sky is unmarked by clouds or even a vapor trail. "We've come a long way in 75 years," he says. "This is my 26th so I've been through a third of it, and definitely there have been very significant changes in that time. And, of course, if you go back further, we have had more significant change."

However, it is not the past with which Dr. Moskalyk is concerned—not even in this special anniversary year. It is the future which his Faculty is addressing.

And about that future he is cautiously optimistic: "I think we're headed in the right direction. I think with some luck and good management—if we can manage to do some work in being able to establish some new positions and replace some of the people who will be retiring in some of the areas—I think we are going to proceed into the next 75 years with a good base.

"And it would help—a lot—if the economy would turn around." ■



Michael Wolowyk, '65 BSc(Pharm), '69 PhD

By Barbara Smith, '81 BA

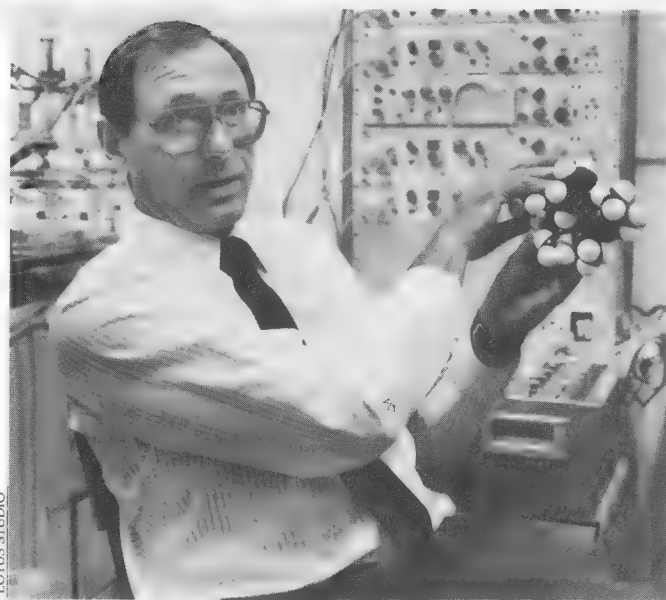
Dr. Michael W. Wolowyk is now an internationally respected pharmaceutical scientist and a recent recipient of a prestigious McCalla Professorship in recognition of his work in pharmacology at the University of Alberta, but he admits that his career choice was something of an accident.

He recalls that when he applied to the University of Alberta his choice of a faculty was brought about by a love of chemistry and the lack of a second language. "I hadn't taken French in high school and so admission to chemistry wasn't possible. The pharmacy faculty offered the most chemistry courses without that requirement."

Not a particularly auspicious beginning to a career which has recently earned him a McCalla Professorship from the University for the 1989-90 academic year. The honor is in recognition of Dr. Wolowyk's work with medicinal chemist Ed Knaus and will give the pharmacologist a year away from the classroom so that he can concentrate on his research program.

"I was especially pleased because Dr. McCalla was dean of graduate studies when I started my graduate work," says Dr. Wolowyk. Then with a smile he adds, "I may still do the odd lecture, though. There's a bit of ham in all of us."

Deeming his office in the Dentistry-Pharmacy Centre "too cluttered" to conduct an interview in, the personable scientist opts for the staff lounge one floor below. The choice is a significant one, because here, over coffee, Dr. Wolowyk and his colleague initially discussed the



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possible benefits of linking their investigations.

By combining Knaus's work with molecules and Wolowyk's interest in the pharmacology of the body's transport systems the pair were able to advance each of their causes. The result is a newly patented drug.

Dr. Wolowyk's enthusiasm is evident as he explains how the compound functions. The drug (code named RK-30) locks on to cells in the veins and arteries and blocks their ability to absorb calcium. With calcium levels in the blood vessels lowered the heart can pump more blood with less effort. At the same time the drug increases the amount of calcium absorbed by the heart muscle and, in doing so, strengthens it.

The research needed to design and develop this drug has been expensive in both time (five years) and money (\$300,000). The Canadian Medical Research Council and the Alberta Heritage Foundation for Medical Research have both helped by supporting the project with grants.

The dedication that Dr. Wolowyk brought to the project has its source in some statistics that he quotes. He points out that high blood pressure, coronary disease, and congestive heart failure are the most commonplace

Dr. Wolowyk

cardiovascular diseases in people between the ages of 35 and 70, and heart disease accounts for 30 to 40 per cent of all Canadian deaths.

The obvious financial rewards of private industry have never tempted Dr. Wolowyk. "I'm an academic," says the professor who earned both his baccalaureate and doctoral degrees at the University of Alberta, and then spent two years in England as a postdoctoral fellow.

When he returned to Canada, Dr. Wolowyk joined the U of A staff and was promoted to a full professor in 1981. An involved faculty member, he has served on many committees over the years and is also an adjunct professor in the Faculty of Medicine's pharmacology department and a scientific research associate on the medical staff of the University of Alberta Hospitals.

Despite the dedication to science these appointments reflect, Dr. Wolowyk is anything but the stereotypical "dry as dust" scientist. He has wide-ranging interests, including scuba diving, a recreational pursuit he often combines with his scientific interests at Bamfield Marine Station on Vancouver Island.

At the Bamfield biological

research station, Dr.

Wolowyk investigates the amino acid transport system of the most primitive living vertebrate, the Pacific hagfish (*ptatretus stouti*) in the hope of obtaining a more explicit and useful knowledge of cell biology.

However, science is not Dr. Wolowyk's only concern at Bamfield. "We won the annual T-shirt design contest," he proclaims proudly. The winning proposal? What else, the hagfish. The contest, it seems, was assured by highly unscientific and even slightly unscrupulous methods. The winning entry was to be selected by popular vote, so Dr. Wolowyk spoke to his friend the station cook. Word spread quickly as to which design was the wisest choice.

"The cook told the students they'd be eating hagfish if they didn't vote for our entry," recalls the scientist, who in more serious moments is also involved in the extraction of active ingredients from anemones at the marine station. From these he hopes to gain further knowledge of cardiac stimulation.

Also involving fish but further afield geographically, Dr. Wolowyk is collaborating with a biochemist at the Chinese University of Hong Kong. Research has identified certain species of fish with an unusual way of accommodating in order to survive in either fresh or sea water. This is significant, explains Dr. Wolowyk, because cells usually swell in fresh water and shrink in salt water. The process of adaptation by which these fish control the swelling/shrinking provides a model for a similar process involving mammalian brain cells, says Dr. Wolowyk. And this model, he says, could ultimately be helpful in the control of certain forms of fatal brain swelling (cerebral edema) in humans.

Another of Dr. Wolowyk's scientific interests is the control of the body's amino

acids. This, he speculates might point to a way by which cancerous growths could be controlled.

Recently Dr. Wolowyk's interest in calcium took him to a conference in Israel where the participants were dramatically reminded of the importance of this element to life. "It is necessarily present at conception and conversely can cause death," he says.

Calcium builds up in muscles when they are cooled. When tissue is re-warmed the calcium level will adjust so the muscle can work, but there is always some residue. This accumulation can be a time bomb—at some point there will be too much. Because cooling processes are necessary for organ transplants and heart surgery, Dr. Wolowyk is seeking solutions to the calcium overload problem. This has aroused an interest in hibernating animals. They appear to control calcium transport at low temperature, and this might imply a non-drug, natural method of controlling calcium absorption, he says.

A warm and personable man, Dr. Wolowyk is disarmingly modest. When referring to his research he doesn't use "I" or "me"—always "we." After all, he says, there are "a lot of people involved in all of this. It certainly isn't my effort alone."

Married to Norma (Rees) a '65 BSc(Pharm) classmate, the father of two looks forward to the 75th anniversary of his Faculty, even more so because his son will be graduating from pharmacy. "He lived through my lectures!" recounts the professor in mock amazement.

He doubts that his daughter will attempt the same feat. "She will graduate from high school this year and study French abroad for at least a year," he says.

In response to a question asking if it is possible for him to identify a highlight to his

"accidental" career, Dr. Wolowyk pauses. "No, really I can't. Each year has been a highlight. The most rewarding aspect of my career has been the people I've been able to meet and work with. Some exceptional people. I've enjoyed that tremendously, and to me that's what life's all about."

Engineers Honored

The Canadian Academy of Engineering has elected 28 new fellows, among whom are six University of Alberta graduates.

At its meeting this summer, the second annual, the Academy increased its total

membership to 101.

Among the new fellows are U of A graduates **George Ford**, '42 BSc(Eng), '46 MSc, '88 DSc (Honorary), professor emeritus of the University of Alberta; **Donald Harvie**, '45 BSc(Eng), '85 LLD (Honorary), deputy chair of Petro Canada; **James MacGregor**, '56 BSc(Eng), chair of the U of A's Department of Civil Engineering; **Gerald Maier**, '51 BSc(Eng), president and CEO of TransCanada Pipelines; **John Poole**, '37 BSc(Eng), '87 LLD (Honorary), founder of Poole Construction Ltd. and Oxford Development; and **Robert Stollery**, '49 BSc(Eng), '85 LLD (Honorary), chair and CEO of PCL Construction.

1989 Class Reunions

The Alumni Association is happy to assist individual classes in organizing special events during the homecoming activities of Reunion Weekend '89 (September 22-24, 1989) or reunions at other times. The following classes are currently planning reunions for the coming year:

CLASS/PLACE/DATE/CONTACT

'29 **Graduating Class** Edmonton/September 22-24/Victor Gowan
'39 **Engineering** Edmonton/September 22-24/Harold Johnson
'39 **Household Economics** Edmonton/September 22-24/Catherine Iles
'39 **Law** Edmonton/September 22-24/Marjorie Bowker
'39 **Nursing** Edmonton/September 22-24/P Edwards & B Legg
'39 **Graduating Class** Edmonton/September 22-24
'49 **Chemical Engineering** Edmonton/September 22-24/Lloyd Faibish
'49 **Civil Engineering** Edmonton/September 22-24/Ron Jones
'49 **Mining Engineering** Edmonton/September 22-24/Ed Olynek
'49 **Home Economics** Edmonton/September 22-24/Sheila McLaggan
'49 **Medicine** Lake Louise/September 22-24/Neil Duncan
'54 **Agriculture** Edmonton/September 24/Ron McCullough
'59 **Chem Engineering** Edmonton/September 22-24/Wayne Maunder
'59 **Civil Engineering** Edmonton/September 22-24/Verne Jones
'63 **Law** Edmonton/September 22-24/Anne Russell
'64 **Agriculture** Edmonton/September 22-24/Cliff Wulff
'64 **Arts** Edmonton/September 22-24/Lynn Malin
'64 **Commerce** Edmonton/September 22-24/Larry Bourk
'64 **Education** Edmonton/September 22-24/Morris Flewelling
'64 **Chemical Engineering** Edmonton/September 22-24/Bernie Bradley
'64 **Electrical Engineering** Edmonton/September 22-24/Case Muilwyk
'64 **Law** Edmonton/September 22-24/Laurence Decore
'64 **Phys Ed** Edmonton/September 22-24/C Moser & I Cloutier
'64 **Science** Edmonton/September 22-24/Eugene Lechelt
'69 **Home Economics** Edmonton/September 22-24/Wendy Lomnes
'69 **Phys Ed** Edmonton/September 22-24/E O'Reilly & B Steadward
'69 **Rehab Medicine** Calgary/September 22-24/Carol MacDonald
'69 **MEd (Admin)** Edmonton/September 22-24/Audrey Clark
'79 **Mech Engineering** Edmonton/September 22-24/B VanRootselaar
'79 **Pharmacy** Edmonton/September 22-24/Igor Shaskin

Some locations and dates are tentative. Should you require information on the reunions noted, or if you wish to organize a reunion for a class not listed, please contact Sandra Kereliuk in the Office of Alumni Affairs.

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TIGER TOPS

\$5799/Edmonton*

March 31 to April 17, 1990

This fascinating new itinerary includes flights that will take you completely around the world. Thai Airways International will take you across the Pacific to Thailand, Nepal and India before you continue on to London. Your globe circling journey will be complete when you fly home across the Atlantic. This 19-day tour begins with four nights in Bangkok, then its on to Chiang Mai before leaving Thailand for Katmandu and Tiger Tops, Nepal. Next, venture to India where you will visit Varanasi, Agra, and Delhi before heading to London. If you want to see the Himalayan mountains, the Taj Mahal, the Ganges river and the temples of Katmandu, why not do it all at once, on *Tiger Tops*.

For more information about the 1990 Discovery Adventures, please contact Sandra Kereliuk in the Office of Alumni Affairs, (403) 492-3224. Waiting lists are maintained for "sold out" tours.

*Prices shown are lowest available, per person (double occupancy) from the gateway city indicated.

Advancing Pharmacy and Pharmaceutical Sciences

Unique Program focuses on Clinical Pharmacy

Among the graduate degree programs offered by the Faculty of Pharmacy and Pharmaceutical Sciences is one that is unique in Canada: the two-year clinical program leading to a Master of Pharmacy degree.

Dr. Robert Foster, who co-ordinates the program for the Faculty, explains that the MPharm is a professional degree, as distinct from a research degree. "It's strictly a two-year clinical program; there's no bench research involved," he says.

He says that the MPharm program is designed to give BSc(Pharm) graduates "more clinical exposure, putting them on the cutting edge in terms of drug information and therapeutics" to prepare them for practice in a clinical environment, typically an acute-care hospital (in fact, when the degree was introduced in 1969 it was called a Master of Hospital Pharmacy).

According to Dr. Foster, the first year of the degree program is "virtually 100 per cent didactic," while the second year features clinical rotations and a clinical project. For many of the students this is a first step towards specialization in a particular area of pharmacy—cardiology, internal medicine, geriatrics, and so forth.

Researcher Investigates Fascinating Phenomenon

Since 1985 Dr. Fakhreddin Jamali and his research group in the U of A's Faculty of Pharmacy and Pharmaceutical Sciences have enjoyed continuing support from the Medical Research Council of Canada for a research project which has also attracted funding from drug companies to make up its annual budget,

now in excess of \$150,000. The project is entitled "Stereo Selective Pharmacokinetics of Certain Drugs."

Behind that name there lies a fascinating phenomenon: many drugs, including a number commonly used in cardiology and rheumatology, are actually synthesized as a mixture of two compounds that are chemically identical, but at the molecular level they are mirror images of each other. "In the body," says Dr. Jamali, "the two compounds may act quite differently."

In some cases only one of the mirror-image compounds (known as optical isomers) is therapeutically active. The other, although not contributing to the desired treatment, may well add to the drug's side effects.

Dr. Jamali's University of Alberta laboratory is doing pioneering work identifying and analyzing optical isomers, and then scrutinizing their action in the body to determine the role of each of the isomers in the drug's effects. The implications of this work, as Dr. Jamali points out, are tremendous, both from commercial and therapeutic perspectives. "We are getting to the point where we are recommending now to give only half as much drug in some cases," he says. (Only half as much, but all of it the active isomer.)

Dr. Jamali makes particular reference to some drugs used in arthritis treatment. It is sometimes necessary to administer these in doses as large as three grams, and at this large dosage size they eat away at the stomach. Halving the amount that it is necessary for the patient to ingest would be an obvious boon.

To further dramatize the possible importance of separating active and inactive isomers, Dr. Jamali highlights the case of thalidamide. "Had

we known then what we know now," he says, "one of the optical isomers could have readily been excluded, and then there would have been no problem."

Responsibilities Stressed in Courses

"What we are trying to do is give the students insight into their professional responsibilities—the responsibilities they have to the patient in their role as a pharmacist," says Nancy Rae, one of the Faculty of Pharmacy and Pharmaceutical Sciences' three professional practice co-ordinators.

The professional practice component of the BSc(Pharm) program consists of a full course with a weekly seminar or lab each term and culminates in clinical rotations in the final year. The courses are taught by licensed practitioners with close ties to



Pharmacy Lab circa 1934.

the workaday world of the professional pharmacist. Ms. Rae has responsibility for the first-year courses, Shirley Heschuk works with second-year students, and Sheila Kelcher co-ordinates the activities in the third year.

Among the resources upon which the co-ordinators draw are practitioners, who come into the classroom to share their experiences and insights, and real patients who are brought into the professional practice laboratories to discuss

their conditions and medication and to provide opportunities for the students to sharpen their interviewing skills. Both practitioners and patients are "very enthusiastic" participants, says Ms. Kelcher. "Many of the patients call up and volunteer their services year after year."

An important component of the professional practice curriculum is the utilization of various problem solving exercises and techniques to give the students opportunities to apply the scientific knowledge they are acquiring to the care of the patient.

Communication skills are also emphasized. During their second year students take a special course focusing on empathy and listening skills. In their first year they take part in a public speaking program taught by volunteers from Toastmasters International. The sponsor for the public speaking program is the pharmaceutical firm Parke-Davis, which covers all the associated costs, says Ms. Rae. She points out that almost all of the materials and equipment used in the professional practice labs come by way of donations from pharmaceutical and related companies.

All three co-ordinators agree on the message that they wish to deliver to students: "Pharmacists are an important part of the health care team." The curriculum, they say, is striving to produce graduates capable of becoming competent practitioners, accepting responsibility for patients' drug therapy outcomes.

Research Gives Novel Technology a New Twist

A pharmaceutical scientist at the University of Alberta is experimenting with a novel method of administering drugs that do not lend themselves to oral administration. Dr. Jim Rogers of the Faculty of Pharmacy and Pharmaceutical Sciences is investigating the use of liposomes—minute, fat-like particles—as a way of introducing drugs into the body. "They're natural, biodegradable, safe, and can easily be prepared," he says.

Actually, Dr. Rogers is adding a new twist to this not-all-that-new technology. The idea of using liposomes for drug delivery dates back to the early 1970s when it was observed that natural lecithin (found in blood, egg yolk, and animal tissues) spontaneously formed minute layered capsules when dispersed in water. Water-based drugs, it was reasoned, could be easily trapped in the capsule's core. Furthermore, it wouldn't be difficult to incorporate other drugs between the outer layers.

In the intervening years, health scientists have had a certain amount of success using liposomes for drug delivery, but this technology has been limited by two shortcomings: the instability of the capsules in the gastrointestinal tract, where they are prone to leaking their contents, and their poor bioadhesive properties—they do not stick in place so that their contents can be absorbed by the body.

Dr. Rogers is addressing both these shortcomings by coating the liposomes with a bioadhesive polymer, in effect giving it a protective coating. This will also have an added benefit, he believes, because modifications could be made to the polymer to control the rate of release of the drug, from a matter of minutes to a period of months.

For the past two years, Dr. Rogers and his research associates have been studying several types of polymers and polymer-liposome systems, which they are testing first in test tubes and then in laboratory rats. For the tests they are using two drugs, acetylsalicylic acid (ASA), which is a small molecule, and insulin, which is a large-molecule drug.

When he began the research, Dr. Rogers anticipated that successful microencapsulation (in this case, using the polymer-liposome technology) of ASA would yield an oral liquid form of the drug which would require lower dosage levels and would have the added benefit of reduced irritation to the stomach.

Already his ASA testing has demonstrated not only increased stability but the ability to control the release of the drug.

In the case of insulin, Dr. Rogers believes that microencapsulation could possibly promote the absorption of the drug from the gastrointestinal tract, leading to increased convenience and health benefits for insulin-dependent diabetics.

While microencapsulation related to the delivery of drugs is Dr. Roger's first interest, this technology (which doesn't necessarily involve liposomes) has the potential for employment in a wide range of areas, he says. In fact, he recently signed a research contract with the Alberta Oil Sands Technology Research Authority to investigate the application of microencapsulation techniques to solve a problem associated with microbial-enhanced oil recovery.

Campus Centre Supplies Radiopharmaceuticals

For the staff of the Edmonton Radiopharmaceutical Manufacturing Centre, located in the Dentistry-Pharmacy Centre at the University of Alberta, the workday begins at 4:00 a.m. Every weekday employees of the Centre carefully package a variety of

radioactive isotopes in lead containers, which are then surrounded by absorbant materials and packaged once again in stainless steel containers. Surrounded by more absorbant material these packages are then sent on their way to Edmonton hospitals.

"We're the largest supplier of ready-to-use radiopharmaceuticals in Canada, says the Centre's director, John Scott. He and the Centre's other seven full-time staff members are employed by the Alberta Cancer Board, but they naturally have a close working relationship with the Faculty of Pharmacy and Pharmaceutical Sciences, says Mr. Scott, who is himself an adjunct professor in the Faculty.

The Centre manufactures its products from radionuclides purchased from suppliers such as Atomic Energy of Canada Ltd. These are converted for hospital use by the Centre's staff, who also make all of their own "kits" — the ready-for-use materials to which the radiopharmaceuticals are added. In addition to research associated with the development of these kits, the Centre conducts a modest

Packaging products for shipment at the Edmonton Radiopharmaceutical Manufacturing Centre.

research program in co-operation with the Faculty of Pharmacy and Pharmaceutical Sciences. At present this program is focusing on the design of a brain-imaging agent.

According to Mr. Scott, the Centre operates on a non-profit but self-sustaining basis. About 90 per cent of its products are used for diagnostic imaging; the remainder are radioactive drugs used in therapy.

Placements Provide Practical Experience

For the past six years an integral part of the professional practice education for pharmacy students at the University of Alberta has been a series of clinical rotations, which were introduced in 1983.

The rotations come in the final year of the BSc(Pharm) program, at which time the second semester is organized into two timetabling blocks: six weeks for classes and six weeks for practical experience in pharmacies.

Each student, regardless of his or her career plans gets four weeks exposure to the practice of pharmacy in an acute care hospital. The remaining two weeks are spent in either an extended care environment (typically a nursing home) or in a community pharmacy—whatever would best round out the individual student's education. The block timetabling allows for the rotations to be arranged throughout the province.

Since the program's inception responsibility for organizing the placements for the more than 100 students who enter the final year annually has fallen to Cheryl Cox, the Faculty's clinical rotations co-ordinator.

It's a big job, but she says that the community response has been positive and to date no student has ever been without a placement. Her job will be an even bigger one in the years to come, because the clinical rotations will be an even bigger part of the five-year curriculum which is being introduced by the Faculty this year. Plans are for



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each student to take 12 weeks of rotations, but the details of implementing this have not been finalized.

A firm believer in the value of the practicum experience, Ms. Cox continues to find satisfaction in her job. "One of the most rewarding aspects," she says, "is hearing the students talking about how all of the assignments and projects they have been doing contribute to patient care."

Dramatic Food-Drug Interaction Studied

Most of us are familiar with the labels which advise us to take some prescription drugs on an empty stomach, others with a meal. These labels result from studies which show that food can effect the way in which a drug is absorbed into the bloodstream to reach the desired therapeutic level.

At the University of Alberta, Dr. Yun K Tam, an associate professor of pharmacy and pharmaceutical sciences, and his research colleagues are finding that with some cardiovascular drugs the effect of food can be dramatic. This is being amply illustrated in the course of the team's investigation of the effects of nutrients on three common cardiovascular drugs (two calcium channel blockers, diltiazem and verapamil, and lidocaine, an anti-arrhythmic agent) which are degraded rapidly in the liver.

Dr. Tam, whose continuing research interest is in the interaction between drugs and liver metabolism, explains that as far as the body is concerned a drug is an exogenous compound that has to be eliminated from the bloodstream. The liver, the first organ to receive blood from the intestines, plays an important role in this regard. And in the case of the drugs on which Dr. Tam is currently focusing, it does this work very efficiently, removing up to 70 per cent of the drug before it can circulate in the bloodstream of the patient to bring about the desired therapeutic effect.

However, the U of A researchers are finding that when the drug is taken with

food there is a marked difference. "We have found that food can increase the bioavailability of one of the drugs by as much as 50 to 100 per cent," says Dr. Tam, who is also looking at what happens when the drugs are used in combination, as is often the case.

He makes the case that it is very important to know how the bloodstream level of the different drugs is affected by food and other drugs. "The result could vary from one in which the amount of drug in the blood is reduced to a level that is insufficient to produce the desired curative effect, to one in which the blood's drug level is so elevated that is life threatening," says Dr. Tam, who hopes to obtain the necessary data to quantify the effects of the different drug/nutrient combinations.

Industry Supports Manufacturing Course

One of the optional courses offered by the Faculty of Pharmacy and Pharmaceutical Sciences to selected undergraduate students in their final year is Pharmacy 561 Pharmaceutical Manufacturing.

"It is very important to introduce students to the pharmaceutical industry," says the co-ordinator of the course, Dr. Jim Rogers, who adds that the Faculty is fortunate to have the facilities to make the course possible.

Some of the laboratory equipment has come by way of donations from drug manufacturing firms. The manufacturers also play a role in supporting the lecture component of the course. "The uniqueness of the course is that the content is delivered via lecture by reps from the pharmaceutical industry," says Dr. Rogers. He adds that many of them come from eastern Canada and they do so at their company's expense.

It has been Dr. Rogers' experience that the course has been a success all around. He describes it as an important avenue into the industry for students and says that "industry loves it, and we like it, too."

Drug Testing Expertise Applied to Depression

A sign of our times is the importance that drug testing has assumed, not only in sports, where it regularly makes headlines, but in the workplace and in other aspects of our lives. And this testing has become increasingly more sophisticated, says a University of Alberta scientist whose research has helped achieve this sophistication.

"We can not only detect drugs of abuse but the by-products of breakdown as well. And in the case of anabolic steroids, we can also check testosterone levels, which are distorted by steroids. There's such a wide range of things to look for," says Ron Coutts, a professor in the Faculty of Pharmacy and Pharmaceutical Sciences who has pioneered analytical methods for a variety of compounds, including drugs and environmental chemicals. His work is particularly important because it focuses on analysis in biological systems such as blood, tissue and urine.

Since the early 1980s Dr. Coutts has been contributing his special expertise to a co-operative initiative of the University of Alberta Faculties

of Medicine (Department of Psychiatry) and Pharmacy and Pharmaceutical Sciences — the Neurochemical Research Institute, which was created to assist the clinical treatment of depression.

Dr. Coutts and his colleagues in this co-operative research venture are using a \$1.25 million provincial grant to investigate the drugs used for the treatment of depression with the goal of identifying and quantifying the therapeutic effectiveness of the drugs when used to treat depression of varying types and severity.

To date "hundreds of patients" have been clinically diagnosed, treated and their blood and urine monitored, says Dr. Coutts. Using the same analytical methods that detect trace amounts of drugs or environmental pollutants he tests for substances that provide clues to chemical changes taking place in the brain of a patient.

The information provided by this analysis is currently being correlated to the observations

University Professor Ron Coutts is applying sophisticated drug testing techniques to the investigation of drugs used for treating depression.



made by the clinicians, information provided by the patients, and the particular drugs used in treatment to provide a data base for the use of health professionals.

Scientist Says New Drugs Face Hard Road

The road to market is an arduous one for new drugs, says medicinal chemist Ed Knaus, who has a variety of compounds now engaged in that journey.

Dr. Knaus, a pharmaceutical scientist at the University of Alberta, is a specialist in drug design. He has almost a dozen drug patents to his credit. All of these are novel compounds which have shown great promise in laboratory and animal tests, but given the steep climb to market, none are yet licensed for use in humans.

To illustrate the slow march to pharmacists' shelves, Dr. Knaus refers to a "unique discovery" he and colleague Mike Wolowyk made about a year and a half ago: a class of compounds with excellent potential for treating congestive heart failure. Not only do these compounds (which are calcium channel modulators) have the ability to increase the force of cardiac contractions, at the same time they relax the blood vessels, making it easier for the heart to pump blood.

Since then the researchers have been attempting to design structurally more potent compounds powerful enough to give the desired effects in humans.

They are now almost there, says Dr. Knaus. And now is when it starts to get expensive. In order to proceed further the U of A researchers recently signed a development agreement with the pharmaceutical firm Miles Canada Inc., which is linked to Miles in the U.S.A. and their parent firm Bayer in West Germany.

Once a compound of the right potency is achieved, the technology will be transferred to Miles, and the company will begin very extensive toxicity studies in animals. These will take about two years, says Dr. Knaus. If everything looks

good at that point, Miles' scientists will begin the next stage of testing: distribution, metabolism and formulation studies to bring the product to the stage where the company can apply for an "innovative drug document" to begin limited clinical trials involving a small group of humans. Assuming that all goes well, the testing will then advance to a larger scale and finally, if approval is granted, to multi-centre clinical trials involving hospitals throughout the world. Only after these results prove positive will the drug be licensed for use and find its way to pharmacists' shelves.

"It's a tremendous expenditure of time and money," says Dr. Knaus, who estimates that it typically takes a new drug six to eight years to reach the market and costs between \$70 and \$140 million to get it there.

Office Promotes Continuing Education

Recently the office for Continuing Pharmacy Education at the University of Alberta decided to try something different. With the help of a 10-person planning committee, the office undertook the design of its most ambitious single-course offering to date, a 42-hour course entitled "Pharmacy and the Golden Years," which is to be offered in Edmonton in late September 1989.

The response from Alberta pharmacists confirmed Arlene Ponting's belief that there is a very genuine interest in quality continuing education in pharmacy: within two weeks after the course was announced the 40 places available in the course were filled and 10 more added, says Ms. Ponting, who has been the co-ordinator of pharmacy continuing education in Alberta for the past three years.

Her office was created in 1975 at the time that Alberta made continuing education mandatory for pharmacists—the first Canadian province to do so. (Alberta pharmacists are now required to obtain credit for 45 hours of continuing education every

three years.) The office is a joint undertaking between the Faculty of Pharmacy and Pharmaceutical Science and the Alberta Pharmaceutical Association, which provides the office's annual operating grant.

"The fact that we are a joint effort is really a plus for us," says Ms. Ponting, who appreciates the close working relationship with the Association and the environment and resources which the University provides, including the campus expertise related to adult education.

"Continuing professional education is becoming much more a wave of the future—it's even a distinct field of study in education now," says Ms. Ponting, who believes that in our information-intensive world, universities will have to come to view education in the professions more as a continuum.

The continuing education offered by Ms. Ponting's office is a mixture of home study and "live" programs offered at eight centres throughout Alberta. Four times per year packages containing correspondence courses are sent out to all pharmacists in Alberta, and additional courses can be ordered through the continuing education office. While much of the course material originates with the Canadian Council on Continuing Education in Pharmacy, the Alberta office designs and organizes some of its own course material, as it did with "Pharmacy and the Golden Years." The great interest shown in this pilot project will no doubt result in additional courses of this nature in the future.

Bulletin Board Provides Answers, Experience

For the computer literate pharmacist with a computer, a modem and a telephone, the answer to a puzzling question may be only a few keystrokes away.

In addition to the commercial health sciences and drug information data bases that pharmacists can access, Alberta pharmacists can communicate via computer

using an electronic bulletin board maintained at the University of Alberta by pharmacy professor Robert Locock.

Dr. Locock, who quickly became a fan of microcomputers when he began using them shortly after their introduction a decade ago, maintains the bulletin board "more or less as a hobby," he says. Users of the free communications interchange—mostly pharmacists, but also a few dentists and others interested in drug information—can address questions to all or particular users or can access a number of information files when they phone (403) 492-7689.

Mixed in with the files providing drug information ("Negative effects of anabolic steroids," for instance) are files designed to promote pharmacists' computer literacy. These computing-related files include shareware and utility files, such as a program which can be used for making prescription labels.

The bulletin board's creator says that helping pharmacists, many of whom use "turn-key" computer systems in their pharmacies, explore the possibilities that computers open to them was an important consideration when he established the bulletin board. "I wanted to help people get comfortable with communicating by computer with distant data bases or each other. They can learn on the bulletin board free of charge, whereas commercial services—medical data bases and drug information services—are not cheap," he says.

Dr. Locock is also trying to promote computer literacy among his students, but is hampered in this because the Faculty has yet to find the necessary funds for a microcomputer lab. "At the moment we happen to have three computers we've scrounged," he says. Students are being given access to these to voluntarily participate in some computer-assisted-instruction programs he has written to go along with the course he teaches in drug analysis. ■

Class Notes

'39

Robert Burns, MD, took "the odd course here and there until they added up to a degree" and received a BA in history and English from the U of Victoria this spring. After graduating from the U of A he spent five years in the Navy before moving to Victoria, where he was that city's first dermatologist. He later moved to Detroit, where he practiced before returning to Victoria in the '70s. He retired on May 16 of this year, 50 years to the day after his U of A graduation.

'41

Robert H. Blackburn, MA, '40 BA, who joined the staff of the U of Toronto Library in 1947 and was that university's chief librarian from 1954 to 1981, has written a book on the history of the U of T Library. It was published by that library this June.

'46

Shirley Imeson (Ells), Dip(Nu), is the proud mother of two Olympic athletes. Her sons Garth and Rick, who competed

in luge events, are now winding down their competitive careers and becoming involved as coaches.

Lloyd Grisdale, MD, '42 BSc, has been elected to the board of directors of the Zurich Life Insurance Company of Canada.

'48

Harald Schwarz, MD, of Edmonton and his wife recently celebrated their 50th wedding anniversary.

D. Hugh Currie, BSc(Eng), who recently retired from the General Electric Company after 33 years with that firm, now lives in Morgan Hill, California and describes himself as a "small-time farmer."

'49

E. Louise Estwick, BSc(HEC), who worked in hospital dietetics, and her husband are finding their lives busier than ever now that they are retired. Both are involved in getting a new seniors' drop-in centre operational in Gloucester, Ontario. She is past president of the centre and organizer of a five-day food service operation. The cou-

ple also keeps busy following the career of their daughter Leslie, one of Canada's top female high jumpers.

'50

Jack Craine, BA, has been named director of CBC London and will take up his new duties on October 1. A former director of programming for the CBC's English television network, he recently served as program director of CBC's Northstar Network, a proposed Canadian program service for distribution on U.S. cable networks.

Kenneth Spread, BSc(Ag), has been retired for three years but still remains on call as a part-time member of the Alberta Surface Rights Board when required.

'54

Nicholas Bozak, BEd, '52 Dip(Ed), of Medicine Hat, Alberta is now retired but maintains an involvement in education as a part-time math instructor in the college preparation division of Medicine Hat College.

'56

R. Marilyn Dickson (Grevett), BSc, recently received a Master of Divinity degree from Southern Methodist U and was ordained into the Christian Church (Disciples of Christ) in Dallas, Texas. She is currently on the staff of a large metropolitan church in Mabank, Texas. **W. Ross Walker, BComm**, senior partner and chief executive of Peat Marwick Canada, was recently elected president of The Institute of Chartered Accountants of Ontario for 1989-90.

'58

J.J. Harrold Morris, BEd, '53 BA, was recently elected moderator of the 115th General Assembly of the Presbyterian Church in Canada. Dr. Morris, who holds a master's degree from Vancouver School of Theology and a Doctor of Divinity degree from Knox College, Toronto, served as a minister in several congregations in Alberta and Saskatchewan and for the last nine years has been senior minister of Glenview Presbyterian Church, Toronto. **S. Gordon Gilson, BEd**, '51

Dip(Ed), '54 Dip(ED), and his wife **Beulah Gilson (Rose)**, '49 Dip(Nu), '51 Dip(PHNU), of Didsbury, Alberta keep busy with their hobbies and travel and are enjoying retirement on their acreage.

Elmer Brooker, MSc, '55 BSc(Eng), was recently honored by election as a fellow of the Engineering Institute of Canada.

'61

Jakkanahaly Ramaradhya, PhD, recently retired from his position as a group head with Cominco Ltd., Trail, B.C.

Lawrence Mysak, BSc, has been appointed to the Canadian Steam Ship Lines Chair in Meteorology at McGill U, where he currently serves as the director of the Climate Research Group.

T. Jack Fujino, BSc(Eng), has been named executive vice-president and general manager with over-all responsibilities for the Canadian operations of Nilex Geotechnical Products Inc.

Bud W. Kushnir, BSc(Eng), has been appointed vice-president in charge of the fertilizer division of Sheritt Gordon Limited. **David Searle, LLB**, has been elected a director of Canadian Tungsten Mining Corporation Limited.

'62

Gordon Kay Greene, MA, '54 BA, '55 BEd, recently completed ten years as dean of music at Wilfrid Laurier U in Waterloo, Ontario. He has also concluded a 20-year project to publish all of the French polyphonic music of the fourteenth century with *Les Editions de l'Oiseau Lyre* in Paris. The five volumes are on library shelves in the 24-volume series *Polyphonic Music of the Fourteenth Century*. He reports that he recently paused to add up all the time he spent on research trips to Europe and was surprised to discover that he has spent more than three years of his life in Paris.

J. Barry Worsfold, BA, is currently a psychiatric social worker with the Victoria Health Project's elderly outreach service.

Victor Mollerup, MD, '58 BSc, of Penticton, B.C. has been honored by Camrose Lutheran College. He was a recent recipient of a distinguished alumnus award from that Alberta college, from which he graduated in 1953.

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'63

Dennis Greentree, BSc(Eng), of Calgary manages a small oil field services company.

'64

D. Nolan Blades, BSc(Eng), has been named executive vice-president and chief operating officer by Chauvco Resources Ltd.

'65

William Bennetts, BSc(Pharm), having spent the last 10 years in Vancouver as a pharmaceutical manufacturer's sales representative, recently started working as a staff pharmacist at Kootenay Lake District Hospital in Nelson, B.C.

Bill Brand, BSc(Eng), is responsible for Petro-Canada's national marketing strategies and initiation of new products and customer services in his new position as Petro-Canada's vice-president, marketing and development, products division.

D. Robert Weir, PhD, has been appointed vice-president, technology by Sherritt Gordon Limited.

'66

E. Anne Schmitt (Malcolmson), BSc(Nu), and her husband departed Vancouver in May 1986 in their 10-metre, junk-rigged schooner to see the world. In May 1989 they reported that they were leaving Florida to cross the Atlantic via Bermuda and the Azores to visit Europe and the Mediterranean.

'67

Michael Ricketts, BSc(Eng), who works for Amoco Petroleum Ltd., was awarded the Canadian Operational Research Society Service Award in May 1989. He established the Calgary section of CORS and has served six terms in various executive positions within the society. He is currently vice-president-elect of CORS for 1989-90.

Robert Rosen, BA, president of City Lumber Corp. of Edmonton, has been appointed chairman of the Edmonton Economic Development Authority.

'68

Chung K. Law, BSc, who is a professor of mechanical and

aerospace engineering at Princeton U in New Jersey, has been named a fellow of the American Society of Mechanical Engineers. This designation recognizes at least 10 years of active engineering practice and significant contributions to the field.

Dick Vest, BSc(Eng), who has

devoted much of his career to the protection of the environment in the Vernon area of the Okanagan Valley, recently received the primary award of the B.C. professional engineering society, the R.A. McLachlan Memorial Award.

Donald Butt, BSc, is now the

medical officer for the Constellation Assurance Company.

'69

Wayne Hallyburton, BSc, lives in Sussex, N.B. and is currently a part-time math teacher and author.

In Memoriam

The Alumni Association extends its condolences to the families and friends of the following:

Dixie Pelluet Hayes, '19 BSc June 1989/Halifax

James Wesley Richardson, '23 BSc(Ag) June 1989/Edmonton

John William Hopkins, '29 BSc(Ag), '31 MSc May 1989/Ottawa

Mary Georgina Jaffary (Lehmann), '29 BA May 1989/Toronto

Donald Cameron, '30 BSc(Ag), '35 MSc

John Smith Gardner, '30 BSc, '34 MD April 1989/Calgary

Anna Irene Fowler (Grant), '31 BA Fall 1988

Robert Erin A. McAllister, '31 BSc(Ag), '33 MSc June 1989/Calgary

James Tunstall Clarke, '33 BSc(Pharm) May 1989/Kelowna, B.C.

Richard Harrington Farmer, '34 BSc June 1989/Florida

Helen Margaret Hawthorn, '35 Dip(Nu) February 1988/Victoria, B.C.

Ian Morris, '35 LLB July 1989/Edmonton

David Freifeld, '36 BSc(Eng) June 1989/Edmonton

Clarence Aldo Algot, '37 BSc(Eng) June 1989

Stanley Charles T. Clarke, '37 BA, '45 MEd, '48 MA May 1989/Edmonton

Margaret Gwendolyn Hegler, '37 BSc(HEC) July 1989/Kingston, Ontario

William Gordon Lake, '38 BSc(Eng), June 1989/Sudbury, Ontario

Mary A. Driscoll, '39 BA August 1989/Edmonton

Mildred Alberta Deakin (Heywood), '39 BSc(HEC) 1988

Donald Alfred Perley, '39 MD June 1989/Grand Forks, B.C.

Vera Marion Langille (Allin), '40 BSc(HEC) July 1989/Ottawa

Henri Guy Forgues, '41 BSc, '47 BEd May 1989

Lionel Stanley Holmes, '41 DDS August 1989/Red Deer, Alberta

Mervyn Harris Jaque, '42 BSc(Ag) June 1989/Sidney, B.C.

Leroy Elsworth Smith, '43 BSc(Eng) May 1989

Jesse Frederick Gouge, '43 BA, '44 LLB July 1989/Victoria

Joseph Lloyd Weatherilt, '43 MD June 1989/Edmonton

Douglas Gaetan Roy, '45 MD October 1988/Lethbridge, Alberta

Lewis Wallbridge Caldwell, '47 BSc(Eng) 1989/Ganges, B.C.

Floyd Graham Buckles, '48 BSc(Eng)

June 1989/Newmarket, Ontario

Edith Charlotte Olsen, '48 Dip(Nu), '49 BSc(Nu)

April 1989/Vancouver

James William Snowball, '48 BComm November 1988/Calgary

Warren Louis Ogilvie, '49 BEd, '61 MEd July 1989/Edmonton

Leonard Ernest Warren, '49 BComm June 1989/Edmonton

Ben Allan Bishop, '50 DDS June 1989/Edmonton

John Angus McGregor, '50 BSc, '52 MD June 1989/Regina

Angus James Smith, '50 BEd July 1989/Vermilion, Alberta

Howard Elam Marcellus, '50 BSc, '59 BEd August 1989/Edmonton

Patrick Joseph McCaffery, '51 BA, '52 LLB May 1989/Calgary

Philip Lester Klem, '51 BEd June 1989/Calgary

Murray Neil Brown, '53 BSc(Ag)

March 1989/Acme, Alberta

Joseph Pawelek, '54 BSc(Eng) June 1989/Calgary

William John Smart, '54 BSc(Eng) May 1989/Calgary

John Edwin MacNeill, '55 Dip(Ed), '58 Dip(Ed)

June 1989/Edmonton

Gary Groves Westover, '55 MD June 1989/Fort St. John, B.C.

Frederick George Walker, '56 MD March 1989/Ottawa

Michael William Myronyk, '56 BSc(Pharm)

August 1989/Edmonton

John Theodore Karpoff, '57 BEd, '57 Dip(Ed), '67 MEd January 1989/Edmonton

Wolfgang Gerhardt Walter, '59 DDS June 1989/Mount

Robson Park, B.C.

James Ernest Runions, '59 BA, '63 MD May 1989/Vancouver

Cecelia Grace McLean, '61 Dip(Nu)

July 1989/Coquitlam, B.C.

Pearl Viola Allan, '62 BEd, '67 Dip(Ed) June 1989/Tofield, Alberta

Mary Studholme, '62 BEd, '63 BSc May 1989/China

David Murray Bowes, '63 LLB July 1989/Kelowna, B.C.

Laura Jane Wallbridge (Blackstock), '63 BA August 1989/Edmonton

Gerhard Gary Wirzba, '64 BA, '68 BEd, '75 BLS August 1989/Edmonton

Josef Andrew Roland Guedo, '65 BEd July 1989/Edmonton

Lillian Annabelle Peggy Litwin, '65 BEd June 1989/Radway, Alberta

Uriel Enrique Diner, '67 PhD June 1989/Buenos Aires, Argentina

Brynjulf August Stolee, '67 BEd August 1989/Edmonton

William John Warren, '68 BEd, '74 Dip(Ed), '85 Dip(Ed)

May 1989/Edmonton

Norman Clarence Bara, '70 BA June 1989/Edmonton

Timothy Joseph Grace, '70 DDS March 1989/The Monashees, B.C.

Marie Leonie Labrie, '70 BEd August 1989/Edmonton

Roderick Archibald McLachlin, '70 MSc September 1988/Vancouver

Maurice Turcotte, '70 BA June 1989/Calgary

Susan Doreen Goettler, '71 BPE, '76 BEd June 1989/Edmonton

Kent Rodney Kirkham, '72 BSc January 1989/Peace River, Alberta

Richard Walter Sacharuk, '73 BSc(Eng)

June 1989/Kanata, Ontario

Barbara Maryanne Sephton, '78 BEd July 1989/Edmonton

Ralph Dale Blackmore, '80 BEd July 1989/Edmonton

Ethel Taylor, '82 LLD (Honorary) May 1989/Calgary

Gisela Forchner, '83 PhD August 1989

Ronald Alan Madeley, '83 BSc(Eng) June 1989/Edmonton

Edward Paul Carlow, '84 Dip(Ed) March 1989

Dawn Brenda Wachowicz, '86 BEd June 1989/Edmonton

Ken Allan Zembal, '86 BEd November 1986/Slave Lake, Alberta

Robert Baillie Russell, '89 BEd July 1989/Lanigan, Saskatchewan

Susan Tanner, BA, now living in Ottawa, is a lawyer. She also conducts seminars and workshops in which she elaborates on "The Positive Power of Humor."

Ronald Woznow, BSc, has recently accepted the position of vice-president, environment at Fletcher Challenge Canada Limited.

Hugo Idler, MBA, '66 BSc, has been given the mandate to encourage investment into Ontario from West Germany, Austria and Switzerland as the Ontario government's senior representative for Ontario business in Frankfurt, West Germany.

DAVID MORRIS



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'70

Jean Keeley, BEd, who spent the last three years teaching kindergarten in a rural area, recently moved to Saskatoon. She and her husband are very involved in Worldwide Marriage Encounter, she reports.

John MacRae, BSc, and his wife and three children reside in Sidney, B.C. He is director of petroleum geology for the B.C. ministry of energy, mines and petroleum resources.

'71

Marlene Wilson (Kelba), BEd, substitute teaches in Fort McMurray, Alberta, where her husband is a member of the RCMP. The couple has two children.

Larry Ohlhauser, MD, '67 BSc, has been appointed registrar of the College of Physicians and Surgeons for the Province of Alberta.

Bernard Schissel, BSc(Ag), earned a PhD in sociology from the U of Calgary in November 1988 and has accepted a position in criminology at the U of Saskatchewan.

K. Michael Edwards, BComm, has been appointed vice-chairman of the Toronto Stock Exchange. He is chief operating officer, executive vice-president and director of Richardson Greenshields of Canada.

David B. Lewis, BA, reports that he is in the process of building a nursing home near Manchester, England.

Ovid K. Wong, Dip(Ed), '70 BSc, who is a school administrator in Evanston, Illinois, recently received the Outstanding Science Teacher in Illinois Award and that state's Science Teaching Achievement Recognition Award. His name is included in the *Who's Who in American Education*.

'72

Lillian Zotek (Skoreyko), BEd, lives in Vilna, Alberta, where she taught school for 25 years before her retirement in 1972. Her social studies background has fostered a keen interest in travel, and she and her husband have enjoyed trips as far afield as Malaysia and Eastern Europe. At home the couple are convenors of the Vilna and District History Book Project.

John Perejma, BSc(Eng), works for Husky Oil at its Lloydminster Upgrader.

Rich Vivone, BA, who was the *Gateway* editor in 1968-69, is now the publisher of a weekly political newsletter *Insight Into Government*.

Julianne O'Loughlin, BEd, who was recently married, is temporarily teaching school at the secondary level in Northern Ireland for two years while on personal leave from the Edmonton Catholic School Board. "Memorable experience."

Richard Edgar, BSc, is vice-president, exploration for Chauvco Resources of Calgary.

Marshall Stachniak, BSc(Ag), has been appointed vice-president of the Farm Credit Corporation's Manitoba region.

Ron Dlin, MD, '68 BSc, who is with the department of sports medicine at the Wingate Institute in Israel, will spend a sabbatical year serving as the acting director of the Children's Exercise and Nutrition Center at Chedoke-McMaster Hospital.

Christopher Dean, BSc, after 15 years with CFRN TV News in Edmonton has left to become manager, communications for the Edmonton region of Alberta Social Services.

'73

Barbara Munro-deLeeuw, BEd, recently earned a certificate in the teaching of English as a second language at Carleton U, Ottawa.

Katherine Kokott, BEd, writes that it is great to be back in Edmonton after having taught in La Crete, Alberta and Drayton Valley. She would like to hear from old friends.

Terrance McManaman, BSc(Eng), has been named manager of international sales by Bailey Controls. He previously served that company as Indo-Pacific area manager with headquarters in Singapore.

'74

Dale Schulha, MSc, '72 BPE, '74 Dip(Ed), was recently named chair of the department of athletics at the U of A.

Sandra Polsky, Dip(Nu), who now lives in Toronto, earned a bachelor's degree in photography-instructional media from Ryerson Polytechnical in 1986 and is now a freelance photographer and part-time nurse. She reports that she is also involved in martial arts.

Dorothy Jeffery (Ballentine), PhD, '67 BSc(Pharm), '70 MSc, is the officer in charge of quality

assurance and quality control for Zenon Environmental Inc. in Vancouver.

'75

Joseph de Mora, MHSA, has moved to the Third World as director-general and CEO of the Aga Khan University Hospital, a 600 bed modern tertiary teaching hospital in Karachi, Pakistan.

Dennis McConaghy, MSc, '73 BSc(Eng), has been appointed vice-president, fuel and feedstock by Novacor Chemicals Ltd.

'76

Jean-Marc Deroy, MSc, is commercial attaché with the French delegation to the European Communities in Brussels. He received the appointment at the beginning of the year, following six years at the French embassy in Washington.

Gerard Cartier, MSc, works for Total Compagnie Française Des Pétroles, Paris and is currently seconded to Total Oil Marine in Aberdeen, Scotland, where he serves as a senior geologist.

Jan Manning (Brook), BSc(HEC), reports that she is still with air traffic control at the Vancouver airport and is spending all her spare time fixing the "handyman special" she bought recently.

Guy Turcotte, MBA, has been appointed president and chief executive officer by Chauvco Resources.

'77

Sue Inglis, MA, '75 BPE, who is on faculty in the School of Physical Education and Athletics at McMaster U, lives in Dundas, Ontario. She writes that she recently completed her PhD at Ohio State U and is still playing tennis and looking forward to a BPE reunion.

Lane Borstad, BEd, and **Jeanette Borstad**, BEd, are moving back to Alberta. After they finish their graduate degrees at Queen's U, Kingston Ontario (an MA for him, an MEd for her) they plan to move to Grande Prairie, where he will instruct art history at the regional college and she will teach grade one.

Cecile Langlois-Szaszkiewicz, BFA, '74 BEd, who earned an

MA degree in Canadian art history from Concordia U in Montreal in 1985, is now director at the Centre des arts visuels in Westmount, Quebec.

'78

Susan A. McDaniel, PhD, has accepted a tenured position as a professor in the U of A's Department of Sociology. A faculty member at the U of Waterloo since 1976, she spent the 1988-89 year at the U of A as a visiting professor.

Harry Anchan, BSc, of Calgary is a regional supervisor for a major pre-recorded music video and software supplier. He reports that he is married with three children and that with his "Carl Icahn-style investments flourishing, we hope to retire early to balmy Kerala, S. India—i.e. home." His financial situation was helped recently when he won an \$84,000 Cadillac convertible, which he sold in order to invest the proceeds. "Would love to hear from old friends."

Don Howell, BA, who earned a Master's degree in public administration at the U of Victoria in 1985, is now a policy analyst with the Alberta Workers' Compensation Board.

John Doi, MEd, and his family have moved to Camrose, Alberta, where he will serve as chief deputy superintendent of the Camrose School District No. 1315.

Albert Wall, PhD, is chairman of the physical education department of McGill U, Montreal. **Lorne Verhulst**, MD, '76 BMS, has been appointed assistant executive director (professional affairs) by the Alberta Medical Association.

James Blair, BA, has been named president of Husky Oil International Ltd.

'79

Marvin Soroka, BComm, '76 BSc, has joined the Edmonton office of Deloitte Haskins & Sells as a tax manager specializing in sales tax.

Karen Mills (Nielsen), MHSA, '56 Dip(Nu), '69 BSc(Nu), is the 1989 recipient of the Defries Medal, the highest award in public health in Canada. The administrative director of nursing with the Edmonton Board of Health and an associate professor of nursing at the U of A, she has worked with such organizations as the World Health

Organization and travelled extensively lecturing on public health administration. As chair of a Canadian Public Health Association committee, she played a major role in the distribution of \$25 million of federal money to Third World vaccination programs.

John Stewart, BA, is news editor of the *Red Deer Advocate* newspaper.

'80

Kate Greenaway, BA, after nearly seven years as an information officer with the federal department of energy, mines and resources and some time as a private consultant, is now executive assistant to the minister of corrections for Ontario.

Tim Scapillato, BA, now married and the father of a son and daughter, works in the House of Commons and lives in the Gattineau Hills north of Ottawa.

Ruth Coppens, BA, and **Ben Coppens**, '83 BComm, recently moved to Ottawa, where Ben is a systems analyst for Public Works Canada. At last report Ruth was looking for work in human resource management, a field she has been employed in since graduation.

Robert Porkka, BEd, vice-principal of a French immersion junior high school in Red Deer, is leaving for Baden Baden, West Germany, where he will work on loan to the Canadian government, teaching at a Department of National Defence school.

Del Hepfner, BSc(Eng), has been promoted to vice-president, engineering by Banister Pipelines Ltd.

Shirley Serviss, BA, is a

freelance writer and editor and a poet.

Maurice Ginzer, BA, earned a Master of Laws degree from the London School of Economics in 1988 and now works in the legal department of Citicorp Investment Bank Limited in London, England.

'81

David Lawley, BSc, is now the advanced marketing manager, western region for Imperial Life. He writes that he and his wife, the proud parents of two little girls, have enjoyed Winnipeg for the short time that they have lived there.

Amin Murji, BSc, is the owner of Amtech Computer Systems, an Edmonton company specializing in hardware and software consulting, installation, training and support.

George Gundesen, BSc(Eng), is enjoying married life in Calgary with his wife and young daughter. He is manager of mechanical engineering for Novatel Communications.

James Starko, BComm, is assistant to the director, public affairs for CN Western Canada.

Tuntfye Mwamwenda, PhD,

has been promoted to a full professor at the U of Transkei. He reports that three articles prepared while he was on sabbatical at the U of A in 1987 have been published in British and American journals.

Doug Webber, BSc(Eng), writes that he has realized that the pursuit of capital gains is inimical to the survival of this planet and hence has made his most important goals social justice and peace.

'82

Ralph Brokop, BComm, was recently appointed director of auditing at the life insurance firm Aetna Canada in Toronto. In May he was married to Cheryl Gibson.

Rhona McAdam, MLS, '80 BA, will soon have her third collection of poetry, *Creating the Country*, published by Thistledown Press, Saskatoon. The cover illustration is by **Colleen Philippi**, '82 BFA, '86 BA.

Robert Morrice, BComm, recently joined the Irving Bank Canada/Bank of New York Canada as vice-president. He works out of the Toronto head office.

Jackie Lindberg (Daley), BEd, who was married in 1987, is as

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sistant editor of *Canadian School Executive*.

Patrick Fafard, BA, is currently the director of the Ottawa office of the Ontario ministry of inter-governmental affairs.

'83

Lori Porter, MSc, '80 BSc, who works for ISE Research Ltd. on Canada's west coast, was awarded a medal by Prime Minister Mulroney for her contribution to the Canadian portion of the space program in 1985. She

is now heading up a team doing unmanned submarine research into the coastal seabeds off Vancouver.

Marcel Chichak, BSc(Eng), and **Jane Starr, '82 MLS**, who were married in 1985, are now the proud parents of a son. Marcel is a research engineer for Alberta Transportation and Jane is on leave from her position as technical services librarian with Alberta Agriculture.

Bob Longworth, BSc, '80 BA, and **Linda Crawford, '87 BA**, are living in Iqaluit on Baffin Island. Linda is enjoying her new position as the Iqaluit community librarian. Bob is the manager of the Iqaluit Research Centre for the Science Institute of the N.W.T. He hopes to assist more scholars do work in the N.W.T. and welcomes all inquiries, especially from U of A researchers.

Catherine Hotke-Page, MD, '81 BMS, is visiting Edmonton for a year with her husband and two pre-school sons. "It's great to be home."

Maria Krupp, MA, is a freelance translator-interpreter (Slavic languages) and aspiring writer. Business is booming, she says, adding that she occasionally yearns for the "good old school days at the U of A."

F. Raymond Heath, MED, '67 BComm, has accepted a new position at NAIT, where he will serve as associate dean of continuing education. "A real challenge."

Kim Ellefson (Kennedy), BEd, and **Fred Ellefson, '81 BSc(Eng)**, live in Plano, Texas. Fred, who recently received an MBA from Southern Methodist U in Dallas, is a product manager for Rockwell International. Kim has returned to the MBA program at the U of Texas at Dallas following the birth of their first child.

'84

Tracy Gillan, BEd, is vice-principal at the Alexander Indian Reserve, northwest of Edmonton.

Bruce Rigal, BComm, was the winner of three major academic awards at the U of Chicago. Following his second year at that university's Graduate School of Business, he was named the recipient of the Mayer Prize for Academic Excellence, the Center for Research in Security Prices Award for Excellence in Finance, and the Wall Street Journal Student Achievement Award.

Brenda Lennox, BComm, has recently been transferred to Tokyo as part of a job exchange program. There she will be working in the trading division of The Seiyu Ltd., the second largest retailer in Japan. In two and one-half years she will return to her position in the marketing sector of Alberta Agriculture.

Michael A. Jackson, BA, who earned his law degree from the U of Victoria, has joined the Vancouver law firm Boughton Peterson Yang Anderson.

John S. Bower, BPE, is teaching conversational English in Sapporo, Japan. He reports that the skiing there is excellent, as the average snowfall in a season is three metres.

Helene Proteau, MLS, is the proud mother of a son born in April 1989.

Tom Field, BSc(Eng), and **Carolyn Field (Staniland), BA**, live in Calgary, where he is a production engineer for Encor Energy Corp. and she is an underwriter for Wawanesa Insurance Ltd.

'85

Mervyn Sookdeo, BSc, and **Amy Sookdeo (Kwan), BSc**, now reside in Mississauga, Ontario. She works in Etobicoke as a programmer analyst for Atlass Alloys. He commutes to Toronto, where he is senior programmer analyst for Systemhouse.

Benjamin Medina, MSc, is back in Chile after working for a year as a visiting assistant professor in the agricultural engineering and food sciences departments at the U of A. At present Dr. Medina, who came to Edmonton from Texas A & M University with wife and son (they're expecting an addition to the family in November), is re-

search project manager in the Chilean Institute of Technological Research.

Wynne Palmer, BFA, is enjoying her third year working as a photographer/graphic designer for the Edmonton Space Sciences Centre.

Mark E. Jones, BComm, is pursuing an MBA at Harvard Business School, having left his position with the mergers and acquisitions group of Clarkson Gordon/Woods Gordon in Calgary. He and his wife are expecting their fifth child this year.

Brent Hladky, BComm, is in the MBA program at the U of Texas at Austin.

Leeanne Pawluski, BEd, '83 BSc, reports that she is teaching English to Japanese students in Sapporo, Japan at the International Academy for Youth. "I'm the newest recruit from the U of A and have joined five other U of A graduates."

Paul J. Byrne, PhD, recently accepted a new position as vice-president, academic at Mohawk College in Hamilton, Ontario.

'86

Peter Bailey, BA, and **Anne Bailey (Geddes), '84 BA**, live in London, Ontario. He is currently taking his master's in library and information science at the U of Western Ontario, where she expects to begin a PhD in English this fall.

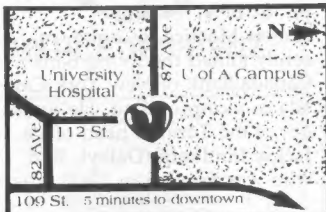
Dyna Vink-Ellis, BComm, and **John D. Ellis, BA**, now live in Ottawa. He earned an MA in economics from Carleton U in the spring of 1988 and now works as a staff economist with the Association of Canadian Distillers. After working for a small software developer as marketing manager, she quit in January to return to school in the master of technology program at Carleton. "Here we are, happy as clams. Only we really miss the Alberta climate."

Laura Calhoun, MD, '78 BA, and **Brian Ritchie, '75 MD, '73 BSc(Med)**, are married and living in Regina, Saskatchewan. Laura has a general practice and Brian conducts a practice in urology. They report the recent birth of their first son. "Many more are to follow."

I. Dale Henderson, BEd, is one of five U of A graduates teaching English at the International Academy of Youth in Sapporo, Japan.

Mark Matsune, BSc, is another U of A graduate teaching at the

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International Academy of Youth in Sapporo. "Enjoying it immensely."

Kathryn Olstad, BA, is living in Shanghai. Since her arrival there three years ago she has been a student of the Chinese language, managed the office for a Canadian consulting firm, and—her present position—been employed in the personnel department of Shanghai Center, a massive apartment-office-hotel-etc. complex which is to have 1,500 employees when it opens.

André Best, BSc, is an environmental assistant with Interprovincial Pipe Line Company in Edmonton.

Ed Mazurkewich, BSc(Ag), and **Lorene Mazurkewich (Wilkinson)**, '87 BA, live in Grande Prairie. Ed is the Westco Fertilizers representative for the Peace River region of Alberta and B.C. Lorene is finishing her RN program in Medicine Hat, Alberta.

'87

Wayne Lidkea, BSc(Eng), and **Larisa Aponiuk**, '86 BSc(Nu),

now reside in Sudbury, Ontario, where he works for Inco as a mine planning engineer and she works as a critical care nurse at Sudbury Memorial Hospital.

Alan Dudley, MBA, completed the international studies co-operative program at Capilano College in North Vancouver and is now in Singapore for a one-year work term with a Canadian company.

Joanne Mulcahy, BComm, who is entering her third year of law at Queen's U in Ontario, spent the past summer working in law offices in Melbourne and Sydney as part of a Canada-Australia law exchange program.

Bjarne Pedersen, MBA, '76 BA(RecAdmin), has been appointed administrator of systems and strategic planning by Bartle & Gibson Company Ltd.

Gloria Lauris Elkholy, MA, who was married in May, has moved to Mississauga, Ontario, where she will work as an economist with the Ontario ministry of health.

Robin B. Clark, BSc(Forest), was recently promoted to quality control supervisor, log sup-

ply department at Fletcher Challenge Canada's Coast Wood Products division based in Vancouver.

Queenie Choo, BSc(Nu), is assistant director of nursing at an auxiliary hospital in Edmonton and the mother of a baby girl.

'88

Lynne Chicoine, BA, has had an eventful year. She is recovering from a bone marrow transplant for leukemia and got engaged in July. "I still hope to attend law school when my energy returns."

Greg Thorsley, BSc(Eng), is a computer engineer for AGT.

Eaman Mah, BEd, is one of a group of U of A grads teaching English to Japanese students in Sapporo, Japan.

Dominic Chin, BSc, lives in Singapore, where he is a geophysics analyst with Western Geophysical Company of America.

John Schlosser, LLD (Honorary), has been appointed to the board of directors of Equitable Life of Canada.

Greg Scott, BSc(Eng), has

moved to Vancouver, where he continues to work with Stanley Associates Engineering.

Sharon O'Connor, BSc(OT), is enjoying her work as an occupational therapist at the Ottawa General Hospital.

Melinda Burn, BSc, is doing graduate work towards a PhD in chemistry at the U of California, Berkeley.

'89

Leila Gosselin, LLB, '86 BA, is articling with the City of Calgary.

Nora Parker, BSc(HEC), '88 BComm, is the 1989 winner of the Eco Lab Award offered through the Canadian Dietetic Association. The award recognizes the community contributions she made as a volunteer recreation aide at the Edmonton General Hospital and in developing an emergency shelter for women, while maintaining a first class standing in the foods and nutrition program she began at the U of A in 1987.

Colleen Murphy (Harty), BSc(Pharm), '85 BSc(Nu), works for Safeway Canada.

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